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USSR Report

AGRICULTURE

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MAJOR CROP PROGRESS AND WEATHER REPORTING

FIELD CROP PROGRESS IN OMSK OBLAST

Moscow SELSKAYA ZHIZN in Russian 24 May 85 p 1

[Article by M. Silvanovich, Omsk Oblast: "With a High Degree of Intensity"]

[Text] In Siberia every spring means a test on grain fields. For Omsk farmers this spring brings even more work--they must add 800,000 tons to average annual indicators of gross grain yield, and the additional grain must be choice. Omsk farmers have pledged to produce 18 quintals of grain per hectare, which is greater by a factor of 1.5 than the average for four unfavorable years during the 11th Five-Year Plan. We are depending on intensive technology, which is being used on 1.1 million hectares for the first time. That is why today it is difficult to find a kolkhoz or sovkhoz shop which has not made even a small contribution to assimilating this technology.

Let me provide an example. Previously in the 10-15 days it took to sow wheat the oblast sowed 200,000 tons of seed and applied 30,000-35,000 tons of mineral fertilizer in physical weight. Today on an area of 1.1 million hectares with the full dose of mineral fertilizers farmers must additionally apply over 180,000 tons of fertilizer--a load that is equivalent to a second supplementary sowing operation.

There is practically no equipment for the local application of fertilizers. For this reason, 523 points for fertilizer preparation and over 1,000 loaders were designed and equipped, 7,000 sowers were reequipped and 13,000 plowshares were manufactured through the oblast's own efforts in a compressed period of time.

In Tavricheskiy Rayon the chairman of the rayon executive committee, I. M. Vaskov, and specialists of Leninskiy Sovkhoz acquainted me with articles produced by local efficiency experts and skilled craftsmen. I saw sower loaders installed on the chassis of tractor trailers and an old grain flow-line reequipped for the processing of mineral fertilizers. In Rassvet Sovkhoz of Lyubinskiy Rayon fertilizer is removed from piles by means of grain combines; in the receiving room a milling cutter has been installed to crush caked fertilizer.

On the one hand it is gratifying to find examples of vital research and creative initiative locally. But it is also difficult to understand why the road of long-awaited fertilizer to the fields has been so bumpy. And the problem is not that Sel'khozkhimiya [Agricultural Chemical Association] has not yet been able to achieve the proper storage of chemicals arriving in loose form. After all, it so happens that we must crush blocks delivered in excellent polyethylene bags from Voskresenskiy and other chemical combines.

This year's spring is a severe one in the Irtysh region. On birches the leaves have hardly come out. For 3 weeks in May one day after another was cold, with nightly frosts. In most regions directors and agronomists made the sowing schedule and the percentage ratio of varieties more precise using productivity and maturation time of these varieties as a basis. As compared to previous years they decreased the area in late-maturing Omskaya-9 wheat and increased the area in more rapidly maturing wheats--Sibakovskaya-3 and Tselinnaya-20. The newest varieties--Omskaya-17 and Tselinnaya-26--have been introduced more widely. Of the 1.1 million hectares earmarked for intensive technology, 600,000 consisted of clean fallow and 500,000--of other good predecessors. Attention to seed quality has been strengthened.

Specialists and people's controllers are vigilantly controlling the coordination of two qualitative factors that are most important for this year--seeding and the application of increased fertilizer doses. About two-thirds of the fertilizer norm is applied locally prior to the sowing of crops and the rest is applied into the rows. The enterprises of Russko-Polyanskiy, Tavricheskiy, Poltavskiy and Pavlograd'kiy rayons brought all reequipped fertilizer sowers into the fields in an organized manner at the same time that moisture was being retained. Fertilizer is applied in a layer several centimeters deeper than the level at which seed is sown.

By the beginning of mass movement of grain sowing units into the fields the local application of fertilizer was carried out in the oblast on 700,000 hectares. Later, when the daily increase in sown area surpassed 150,000 hectares, fertilizer units were sent ahead of grain units. The flow sowing method yields good results in Borisovskiy Sovkhoz, where leaders of socialist competition Sh. Turganov, V. Kudashev and N. Akamov daily sow an area of 150-160 hectares.

Today seed is being sown in insufficiently-warm soil. In this situation the role of chemical protection of plants from weeds and diseases increases. Nevertheless, the oblast association of Sel'khoztekhnika [Agricultural Equipment Association] is fulfilling its obligations with delays as concerns the delivery of chemicals to rayons and enterprises. Also justified are the complaints about the assortment of fertilizers that are delivered to enterprises--little superphosphate is allocated and more and more complex nitrogen-containing fertilizers are being brought in, which is essentially wasteful for the oblast since it has a powerful nitrification "shop" of natural nitrogen (700,000 hectares of clean fallow).

The current year has also sharply revealed the lack of coordination among engineering services in rayons. As a result of last fall's bad road conditions and of the present bad spring the machine-tractor fleet requires

close and efficient contact between Sel'khoztekhnika and sovkhozes and kolkhozes. But partners are exchanging mutual complaints concerning the absence of exchange networks and units. But where will they come from, especially to meet everyone's needs, if farmers operate even written-off tractors and combines until they are completely worn out? But if everything were in same hands it would be possible to deal with such problems effectively. It would appear that in the oblast there are enough proponents of a single engineering service, but practical moves toward solving this problem are still few.

Omsk fields have become the largest supplier in the country of strong and valuable grain as well as of durum wheat. This means that attention must be paid to them from early spring right up until harvest time.

8228

CSO: 1824/432

MAJOR CROP PROGRESS AND WEATHER REPORTING

FIELD WORK PROGRESS IN SIBERIA REVIEWED

Moscow PRAVDA in Russian 1 Jun 85 pp 1, 3

[Article by A. Minayev, V. Sapov and Ye. Solomenko, Omsk, Barnaul and Novosibirsk: "For Siberian Fields/The 1985 Harvest--A Reserve of the Economy"]

[Text] Siberian fields are varied and boundless. The grain fields of Altay Kray and Novosibirsk and Omsk oblasts alone extend for over 8 million hectares. During favorable years over 13 million tons of grain are harvested here. Severe natural conditions often make their own amendments. How are we to mitigate the deleterious effect of weather? Both scientists and practical workers are working on this problem.

To the east of the Urals the fields represent a large granary in the country as well as an important testing area for agricultural science. In the villages of Western Siberia we heard a great deal about various methods that will be put into practice in the future. This includes subsoil irrigation in Kulunda and the return to stationary threshing in the Irtysh and Ob regions. Here we also find elaborations for the long-term future. In practice, scientists come across totally new concepts more and more often--bridge farming, electronic outfitting of the farmer and computerized agrotechnology. But this is the strategy for the future. How has science enriched the arsenal of the farmer today and how successfully is this arsenal being utilized?

The Siberian aktiv is characterized by rich experience in a wise and economic attitude toward land. This refers first and foremost to the soil-conservation system that is utilized on millions of hectares. The scientific institutions of the Siberian Division of VASKHNIL [All-Union Academy of Agricultural Sciences imeni V. I. Lenin] have developed purposeful comprehensive programs such as "Grain," "Feed," "Milk," "Meat" and others. They are being implemented in practical terms.

We asked the first secretary of the Talmenskiy Rayon Party Committee, M. Zadorozhnyy, how strong the ties are between the enterprises here and the Altay NII [Scientific Research Institute] of Farming and Selection of Agricultural Crops.

"Scientists are registered here. They travel to their research city as if on assignment."

As soon as he said that the door opened and the institute's director, N. Yashutin, entered with several workers. A conversation began on the essential needs of production.

We came across similar scientific landing parties in the Ob, Irtysh and Kulunda regions. This year is a special one for Siberia--for the first time its enterprises are beginning large-scale grain production according to intensive technology. In Altay Kray and Novosibirsk and Omsk oblasts alone over 3 million hectares of spring wheat have been earmarked for this technology.

"We approached this goal purposefully," says the first secretary of the Omsk Oblast CPSU Committee, S. Manyakin. "The first stage consists of plowing virgin lands and lands that have been in disuse. The second stage consists of the assimilation of the zonal system. And finally, the third stage involves the large-scale introduction of intensive technology to cultivate wheat and then other crops as well."

Yes, Omsk farmers are increasing soil fertility more persistently and purposefully. They have carried out a complex of measures which has as its basis, in addition to soil-conservation technology, crop rotations with clean fallow having windbreak strips, the skilful application of fertilizer, optimal sowing time and the introduction of intensive varieties. A considerable role was also played by the creation of Kolos NPO [Scientific-Production Association], the head subdivision of which is SibNIISKhoz [Siberian Scientific Research Institute of Agriculture]. The power of science did not increase immediately. During the 7th Five-Year Plan 6.7 quintals of grain were produced per hectare in experimental-production enterprises. During the next five-year period gross grain yield increased by 43 percent in Omsk OPKh's [Experimental-production enterprises], and today yield equals 25-38 quintals per hectare. The oblast has begun to produce an average of half a ton of grain with stability. Neither Altay nor Novosibirsk farmers are standing in one place either.

Still, the development of grain production in Western Siberia lags behind the plan. Altay Kray is in great debt. During the current five-year plan alone it underproduced by over 7 million tons of grain. There are many reasons for this. They include incomplete elaborations by scientists, but not this alone. Despite scientific recommendations, party, soviet and economic organs of Altay Kray could not determine their attitude toward fallow and they kept scrutinizing the structure of sowing areas approved by Omsk farmers. Even now in some areas progressive farming systems are being assimilated slowly.

In the zonal NII as well as in Kolos NPO, modern integrated systems for protecting plants from diseases, pests and weeds are being developed poorly. And after all, these problems do away with one-fifth of the harvest. Many institutes do not have subdivisions on the technology for cultivating grains; there are few scientific groups studying questions related to the comprehensive utilization of fertilizer. To a large degree due to passivity

of science Altay Kray and Novosibirsk Oblast did not achieve the stable procurement of strong and durum wheats.

There are considerable shortcomings in the coordination of scientific-research operations. For example, Siberian farmers have a large reserve in farming on slopes. In the eastern part of Altay Kray this reserve is utilized adequately. The Altay NIIZiS [Scientific Research Institute of Farming and Selection] is the coordinator of research in the given direction in the country. But SibNIISKhоз, which is located in Omsk, included this subject in its plan year after year and at the same time "buried" it well, stating that slope farming is atypical for the oblast. Finally this was removed from the institute's plan. Why is it that for a good 10 years there were subsidies for work that the institute's collective had no intention of carrying out?

On numerous occasions we heard the following opinion: "We are trying to combine agricultural production in a complex, but we cannot achieve a unity in agricultural science." Alas! There can be no argument about this.

In the Altay there is an experimental station for vegetable crops in operation. It has well-trained cadres and great scientific potential. But the sphere of its activities is limited by the framework of Minplodooovoshchkhоз [Ministry of the Fruit and Vegetable Industry], although neighboring sovkhozes and kolkhozes are also in need of elaborations and recommendations regarding vegetables. Wouldn't it be wiser to create an institute on the basis of this station to serve all the enterprises of Western Siberia?

Many specialists feel that it would be expedient to combine all of the scientific institutions of various ministries around the Siberian Division of VASKhNIL so that they would operate as a single team within a single territorial unit. This would increase the scientific potential of the Siberian APK [Agro-Industrial Complex]. At the present time it is still weak. The majority of elaborations of the latest techniques for the village come to Siberia from the European part of the country and naturally, Siberian conditions are not always taken into account. Let's not even speak about slope farming--there is absolutely no set of machines for it.

The abundance of solonets patches perceptibly decreases return on Siberian fields. Science knows the ways to combat them. One of the most effective means is gypsum application. Thanks to it, the productivity of all crops on rejuvenated lands in Omsk's Malinovskiy Sovkhoz almost doubled. Literally at hand--in the northern part of Altay Kray--we have reserves of gypsum deposits. But this inexpensive and highly effective raw material is not utilized either by Altay farmers or by neighboring Novosibirsk farmers. In Omsk Oblast only 60,000 hectares of solonets soils have been improved (and these were improved by the import of gypsum from the Urals and even from the Moscow region).

There are many problems and the scientists see them. Siberian science is getting on its feet with more and more confidence; its union with practice is becoming firmer and more effective. In the Siberian Division [SO] of VASKhNIL we became acquainted with a plan to produce strong wheat grain for contract collectives in Novosibirsk Oblast. The goal is to teach the members of field

brigades about the intricacies of the method. Everything is concise, accessible and concrete. The plan includes a wage fund, the volume of fertilizer to be applied and technical outfitting.

"We must proceed even further along the path toward programmed harvests," says the first deputy chairman of the Presidium of SO VASKhNIL and corresponding member of VASKhNIL, N. Krasnoshchekov, "in order to increase agricultural production not by several percent but by several times."

Local organizational work understandably is acquiring special significance. Why is it that in Omsk Oblast grain production is more stable than in Novosibirsk Oblast and Altay Kray? The reason is that in Omsk Oblast training of agronomists began almost 10 years ago as concerns intensive production methods. Moreover, the entire training methodology was radically altered. Training did not consist simply of "talking and then going one's own way"; examinations were instituted. In seminars held in scientific institutions each agronomist defends his own progressive technological plan.

Similar work is now being done in Altay Kray as well as in Novosibirsk Oblast. Incidentally, thanks to this Novosibirsk farmers achieved the largest productivity of grains per hectare of arable land in their zone.

Thus, the level of knowledge of agronomists has increased sharply. But can they implement today that which science has recommended? There are great possibilities for this. Thus, in recent years there has been a sharp increase in fertilizer supplies for grain fields. A goal is established--each kilogram of "field vitamins" must yield 5-6 kilograms of additional grain.

Unfortunately, the technical outfitting of Siberian enterprises is lagging behind; supplies of chemicals do not correspond to quantities recommended by scientists. There is a shortage of effective equipment for spraying and applying fertilizer. We travelled through dozens of enterprises and everywhere, regular plowshares were the stumbling block. Enterprises of Minselkhozmash [Ministry of Agricultural Machinery] turned out to be unprepared for the changes that are taking place in Siberia's grain zone. The material base for storing chemicals is also poor.

In Western Siberia a network of breeding centers is in operation. A system of accelerated development and multiplication of new varieties, which was first developed in the late 1970's by the collective of SibNIISKHOZ, enables farmers to allocate 2-3 million hectares for a variety that has been regionalized for just 3-4 years. This is what happened, for example, with spring wheats Omskaya-9 and Irtyshanka-10.

Breeders have developed over 20 new varieties. Yet can the Siberian farmer boast that he has 2-3 varieties to maneuver, varieties that are highly productive, that are appropriate for the short Siberian summer, that do not lodge and that provide the opportunity to harvest grain early? Unfortunately, the answer is no.

Science and practice prove that Western Siberia's grain field can increase its productivity by 30-50 percent already today. Some enterprises which have

assimilated intensive technology are already producing 30 quintals of grain per hectare and more. This includes Omsk Oblast's OPKh imeni Frunze, Altay Kray's Kolkhoz imeni Shumakov, Novosibirsk Oblast's Elitnoye OPKh and others. It is important that average and lagging collectives strive towards the level achieved by these leading enterprises. This is the main reserve for increasing return on Siberian fields.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

FIELD WORK PROGRESS IN AUTONOMOUS REPUBLICS OF USSR

Moscow SOVETSKAYA ROSSIYA in Russian 13 Jun 85 p 1

[Article by M. M. Abdulbasirov, chairman of the council of the Dagestan APO [Agro-Industrial Association], D. G. Zavgayev, second secretary of the Checheno-Ingush Oblast CPSU Committee, I. Z. Metsayev, secretary of the North Osetian ASSR CPSU Oblast Committee and G. T. Buryakov, deputy agricultural minister of Kabardino-Balkar ASSR: "Without Allowances for Bad Weather"]

[Text] In the autonomous republics of southern Russia the grass stand that has been produced is an adequate one, but rainfall is interrupting the pace of hay mowing. Whereas in Dagestan 230,000 tons of coarse fodder, or one-fifth of the planned volume, has already been procured, and in North Osetia a larger area has been harvested than by late June of last year, in Kabardino-Balkar ASSR and Checheno-Ingush ASSR the work pace is slower. Our correspondent asked the directors of party and management organs of the various republics to comment on the situation.

[Abdulbasirov] At present 900 mechanized brigades, detachments and links are involved in the procurement of forage. We plan to stockpile no fewer than 1.3 million tons of coarse feeds. By mid-June the first alfalfa harvest is already in stacks and covered storage capacities. It is possible to produce not 55 quintals, as before, but 65 quintals of hay per hectare of irrigated alfalfa.

[Zavgayev] Our goal is to procure more feed than last year.

What is being done to achieve this goal? Following the experience of our neighbors in Northern Osetia, we are introducing a waste-free and all-weather technology for preparing hay and haylage. We will prepare 80,000 tons of alfalfa hay using the active ventilation method. For this we will utilize 128 facilities. At present we are concerned, of course, with the relatively slow work pace.

[Metsayev] Three hundred ventilation units are working on a 24-hour per day basis in the republic's enterprises. We are convinced of the indisputable advantages of all-weather and waste-free technology, which enables us to raise the nutritive value and preservation of feed. Machine operators are also

rapidly mowing meadows and opening up a front for applying fertilizer and for irrigation. This is how new alfalfa harvests are being cared for.

[Buryakov] A special characteristic of this year's harvest is that in many enterprises the first swathes were not placed into haylage trenches or stacks but instead were taken to farms and placed in feed boxes. This year the pasturing season began 2 weeks later than usual. However, we feel that all of this will not interfere with the procurement of 20 quintals of feed units per head of livestock.

8228

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MAJOR CROP PROGRESS AND WEATHER REPORTING

FIELD WORK PROGRESS REVIEWED

Moscow SELSKAYA ZHIZN in Russian 7 May 85 p 1

[Article by S. Lorsanukayev, SELSKAYA ZHIZN correspondent for Groznyy, Nalchik, Ordzhonikidze and Makhachkala: "A Single Complex"]

[Excerpts] This spring is testing not only the industriousness and effort of grain farmers but also their skill and their ability to approach matters creatively. No matter which enterprises we visited in Checheno-Ingush ASSR during this time, the organization and self-discipline of farmers was striking. The bad moods arising from the bad weather have dissipated.

Today, when about 80 percent of the brigades, detachments and links in the autonomous republic have made a transition to collective contracts, accounting for time has become completely different. In the final analysis time determines the fate of the future harvest.

But this is not the only mark of the current sowing period. The industrial technology of cultivating corn has enabled us to program harvests on 40,000 hectares; moreover, half of this area is irrigated.

This is a good and noble goal, but in the meantime farmers of Checheno-Ingush ASSR still must learn, for example, from the corn farmers of Kabardino-Balkar ASSR, who produce large corn harvests from year to year. The farmers of this republic were able to increase corn productivity by 20 percent during the 11th Five-Year Plan, and now they are establishing the goal of producing 100-120 quintals of corn grain per irrigated hectare.

What is helping them to achieve such results? Above all, this includes high quality farming, the skilful use of new varieties and hybrids and machines, and the introduction of industrial technology.

The RAPO council has tried to more closely coordinate the actions of sowing partners. For example, today rayselkhoztekhnika [Rayon agricultural equipment association] has not only prepared machinery on schedule and with quality but it has also taken full responsibility for its operation in the field.

"In the spring all services within our system made a transition to the work regimen of enterprises," says V. Kokov, chairman of Goskomselkhoztekhnika

[State Committee of the Agricultural Equipment Association] of Kabardino-Balkar ASSR. "An engineer-technologist has been assigned to each kolkhoz. Regional technical exchange points have been equipped and technical service links have been created."

The farmers of the autonomous republic have at their disposal all of the possibilities for carrying out the entire volume of field work. Two hundred fifty mechanized links and detachments, which are cultivating corn on over 60,000 hectares, have joined the struggle for the harvest during the final year of the five-year plan.

In North Osetian ASSR this year for the first time the Astrakhan industrial technological method will be introduced; it will enable us to economize on expenditures of material resources and to carry out operations involving plantation care with high quality. Today there has been a considerable expansion of corn sown on ridges. As the practical experience of Mozdokskiy Rayon's Krasnaya Osetiya Kolkhoz shows, this method enables us to harvest 80-100 quintals of grain per hectare.

"We are trying to disseminate the experience of Krasnaya Osetiya Kolkhoz everywhere," notes N. Goov, chairman of the Mozdokskiy RAPO [Rayon Agro-Industrial Association]. "Enterprises have repaired equipment ahead of time, they have brought in seed, fuel and fertilizer and they have made a transition to collective contracts. On the eve of sowing they have demonstrated concern for the training of cadres and for improving their professional skills."

The striving to introduce innovations and creative searches in every place of work--these are the noteworthy characteristics of the current sowing period. In 40 Let Oktyabrya Kolkhoz efficiency experts A. Babichev and A. Bauer made a simple machine tool which enabled them to restore locally many parts which are in short supply. In kolkhozes imeni Dzarakhokhov and imeni General Pliyev of Pravoberezhnyy Rayon double sowers and broad units are being utilized skilfully. Workers of Chermen Kolkhoz of Prigorodnyy Rayon have demonstrated initiative in the timely and quality completion of spring sowing operations. Their contribution was approved by the buro of the CPSU oblast committee.

This year for the first time the enterprises of Northern Osetia are working with contract partners to utilize reclaimed lands highly effectively. One hundred ninety five mechanized links and detachments, of which 157 have made the transition to contract labor, have joined the struggle for the future harvest; 16 of these are trying to produce a 100-quintal harvest from each hectare.

The hum of motors does not cease from morning until night in Dagestan's valleys. Many enterprises of Kizilyurtovsiy, Tarumovskiy and Babayurtovskiy rayons are carrying out sowing operations within a single complex according to a concentrated schedule. Today the area in corn cultivated according to the new technology has been expanded.

Today the volume of field work has risen sharply as a result of the late spring. There is little time left. The farmers of the Northern Caucasus must hurry and must bring all reserves into action. As we know, spring has its own laws and it will not wait.

MAJOR CROP PROGRESS AND WEATHER REPORTING

FIELD WORK PROGRESS IN KURGAN OBLAST

Moscow SELSKAYA ZHIZN in Russian 11 Apr 85 p 1

[Article by I. Shevchenko, Kurgan Oblast: "Visiting the Grain Farmers of the Transurals"]

[Text] The farmers of Kurgan Oblast are laying the foundation for a large harvest of all agricultural crops. But there is special concern for spring wheat, which will be cultivated according to intensive technology on 550,000 hectares. At present favorable conditions are developing for this. Kolkhozes and sovkhozes have prepared fallow and late-fall plowed fields, the necessary amounts of organic and mineral fertilizers have been applied and high-quality seed is available. The repair of equipment is coming to an end. Units will be operated by experienced machine operators. Specialists are satisfied with the reserve of moisture in the soil and are taking measures to retain snowmelt.

In late March all kolkhozes, sovkhozes and regions carried out mutual examinations of readiness for sowing operations; agrotechnical plans, including those for fields on which intensive technology is employed, were defended. These examinations of readiness concluded with a discussion of results during agricultural councils and meetings in enterprises. Enterprises have basically completed equipping 646 brigades and links for cultivating agricultural crops according to a single order. These brigades and link include 9,200 machine operators.

Now the time has come for specific work to implement plans and obligations. Kolkhozes and sovkhozes are treating seed and crushing and sifting mineral fertilizers. The machine operators of Safakulevskiy, Mishkinskiy, Petukhovskiy, Kurtamyshskiy and other rayons are carrying out field work harmoniously while top-dressing winter rye and perennial grasses with nitrogen fertilizers.

Pilots of Kurgan aviation enterprises have actively joined in. They have concluded contracts with enterprises concerning the top-dressing and chemical treatment of crops on an area of 350,000 hectares. Pilots O. Chubeyko and V. Koval' adhered to the schedule in flights over winter crops in Yuzhnoye OPKh [Experimental-Demonstration Enterprise] of Tselinnyy Rayon. In this enterprise aviators are top-dressing 7,000 hectares. Eleven other crews of

An-2 planes are working in Pritobolnyy Sovkhoz, Sadovoye OPKh and in other enterprises.

According to the senior agronomist of the oblast agricultural administration, I. Ozerov, the farmers of Shadrinskiy, Shatrovskiy and Polovinskij rayons are joining in spring operations less actively than required. There there are lags in the top-dressing of winter crops and in the treatment of seed of spring grain crops. Meanwhile, there are many assurances and promises coming from these rayons about the cultivation of a large harvest. It is time to support them in deed.

Not everything is well when it comes to crop structure. In Shadrinskiy Rayon, for example, the area in food spring wheat has been decreased although this crop has always produced a good yield there. Preference was given to oats and barley, which as we know are less demanding of agrotechnical factors but which also do not stand out in terms of yield.

Recently the CPSU oblast committee, the oblast executive committee, the presidium of the oblast trade union council and the VLKSM [All-Union Lenin Young Communist League] oblast committee confirmed the conditions for competition among participants within the agro-industrial complex with regard to increasing the production of spring wheat grain. All field workers of the Transurals are included in the campaign for a large harvest.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

FIELD WORK PROGRESS IN ALTAY KRAY

Moscow SELSKAYA ZHIZN in Russian 21 Mar 85 p 1

[Article by A. Torichko, Altay Kray: "On the Altay Fields"]

[Text] In Altay Kray winter is slowly retreating, although sometimes there are still snowstorms which cover previously-cleared roads, machine yards, seed storage facilities and mulch pits with snow drifts.

"A great deal of snow--a great deal of grain!" says the senior agronomist of the agricultural administration of Tretyakovskiy Rayon executive committee, F. L. Lopatin, as he reminds us about a wise peasant saying. And he supports what he said with the farmers' work results from last year, when special attention was given to the agrotechnical measures on accumulating and retaining moisture in the soil within the farming system adopted here. The region took third place in the kray as concerns the productivity of grains; each hectare yielded almost 22 quintals of grain.

This region is located at the crossroads of two zones--its western section borders on dry Rubtsovskaya Plain and its eastern section extends to the steep steppe slopes of the mountainous Altay. Here the soil and precipitation vary as well. In order to equalize contrasts and to create optimal conditions for raising a large harvest everywhere, grain farmers are trying to approach the matter creatively and to consider local conditions.

"In the foothills we have enough snowfall, and carrying out snow-retention operations means running equipment and consuming fuel needlessly," explains the chairman of Pamyat Iliche Kolkhoz, A. I. Krasnyak. "On the other hand, on plains and slopes subject to winds we must accumulate moisture from soils."

Today the depth of the snow cover has reached 35-40 centimeters on fields. The soil is not deeply frozen; winter crops feel good under a "warm" blanket of snow. Still, the most responsible period, involving the retention of melting snow and its accumulation in the soil, begins now as the snow is melting and settling. Although some of the agricultural measures for this--non-mouldboard plowing across the slope with a retention of stubble on the soil surface, the sowing of windbreak rows on fallow fields, harrowing and making holes in the fields--were carried out in the fall, a large volume of

work remains to be done. We are speaking about creating banks and perpendicular water-retaining trenches on slopes.

Everywhere, the region's enterprises are concluding the affirmation of work plans for fall field operations. At their foundation is a scientifically-based zonal farming system which has precisely characterized the special features of every field in the crop rotation.

Early fall plowed fields have been prepared for all spring crops; moreover, 85 percent of the fields were prepared with the help of sweeps. Fallow has also been prepared in a business-like manner.

Intensive technology for wheat cultivation is planned on 12,000 hectares, or almost half of the entire area in grains. According to the calculations of specialists, this will supply the region with at least 100,000 quintals of grain additionally. A firm foundation has been built to support these calculations. First of all, predecessors and increased soil fertility were taken care of. On over 15,000 hectares wheat will be sown as the second crop following fallow, on sod and in sod rotations with perennial grasses; the remainder will be sown after legumes and corn. For every hectare of grains cultivated according to intensive technology 100 kilograms of active mineral fertilizers have already been stockpiled and will be applied to the soil according to soil cartograms.

The rayon party committee and RAPO [Rayon Agro-Industrial Association] council are giving considerable attention to the selection, distribution and training of cadres who will be raising the current harvest. Right now link leaders, agronomists and department managers are studying intensive technology of grain cultivation in a regional training combine, and senior agronomists of kolkhozes and sovkhozes--in the kray agricultural administration. Machine operators are also increasing their skill. Prior to moving into the fields, 120 persons will be retrained at the regional training combine.

Enterprises are completing the creation of mechanized sowing detachments and the conclusion of contracts for work by independent links. Today 43 percent of field workers will make the transition to collective contracts.

Seed is of special concern to the agronomic service in the region. Despite the unfavorable conditions of the past fall, good-quality wheat, oats, barley, peas and other crop seed has been stockpiled in the granaries of enterprises. Already today 85 percent of this seed corresponds to first and second class sowing standards.

In other words, the region's grain farmers intend to do everything they can in order to meet the sowing period in a model manner. But they do have some difficulties. In order to complete operations at the optimal time, enterprises need ring rollers, seed and fertilizer loaders and light harrows. A difficult situation is developing with the application of mineral fertilizers. With an increase in supplies the possibility has now arisen to apply up to 100 kilograms of active substance per hectare. It is impossible to apply such a large quantity of fertilizer into rows simultaneously with seeding, and we do not have special machines for applying fertilizer to the

soil. Grain farmers are awaiting aid from their partners. But the local inter-rayon association of Sel'khozhimiya [Agricultural Chemical Association] is still fulfilling the role of a transport organization in terms of delivering fertilizers to enterprises.

Equipment repair is proceeding with some lags as compared to last year, especially as concerns the powerful Kirovets tractor and grain-harvesting combines.

In the kray as a whole equipment is being prepared slowly. Thousands of tractors and trucks, 8,000 grain-harvesting combines and many sowing machines and tractor trailers still have not been prepared. This important work is especially poorly organized in enterprises and in repair enterprises of Selkhoztekhnika [Agricultural Equipment Association] of Togulskiy and Charyshskiy rayons, where every fourth tractor and truck is still not ready for work.

The past year gladdened Altay grain farmers with a weighty grain harvest. In order to strengthen and multiply that which has been achieved we must strengthen preparations for spring field work everywhere.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

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CORN PLANTING DATES AND DENSITY

Moscow SEL'SKOYE KHOZYAYSTVO ROSSI in Russian No 2, Feb 85 pp 50-51

[Article by M. Trunova, senior scientific associate at the Corn Breeding Laboratory, and Z. Shchelokova, doctor of agricultural sciences, professor, under the rubric "Science Conducts a Search": "Corn Planting Dates and Density"]

[Text] The planting of corn can be started when the soil has warmed to 10-12° at the planting depth (7-8 centimeters). The combined average daily, biologically active temperatures essential for normal development of the plants is 1800-2000° for quick-ripening varieties and hybrids, 2300-2600° for middle- and late-ripening corn.

Planting later or earlier than the optimal date does not produce any positive results. When the seed is planted late, it frequently goes into soil with inadequate moisture, which considerably reduces the field germination rate. When planted too early (simultaneously with the planting of early cereal crops or soon after it has been completed), when the corn seed is placed into inadequately warmed soil, it suffers greater damage from wireworms and mold.

Experiments have shown that corn should be planted at a time when the average temperature of the air has reached 15° by the time the sprouts appear and does not subsequently drop significantly for a long time. In Belgorod Oblast, for example, this temperature sets in at the end of the second 10 days in May or the beginning of the third. When we subtract 10 days (the average time elapsing between the planting and the development of sprouts), we find that in our climatic zone corn should be planted during the first 10 days of May. This has been confirmed by experience and by our studies.

This crop can be planted ahead of the usual dates if the seed is treated with special protective agents. Various fatty substances have been used as the agents during the past 2 decades, the rendering of the seed water-repellent has become widespread, and the encrustation method has been tested. All of these steps have been aimed primarily at reducing the damage done to the corn by pests in the soil (especially wireworms) and by causitive agents of various diseases. In certain years, 30-40 percent or more of the total corn crop in the oblast is damaged.

With the present method of treating the seed with an aqueous suspension of Fentiuram, the toxic chemical does not stick well to the seed surface. It is

therefore impossible to achieve good preservation of the seed during the period between planting and sprouting.

For 3 years we have studied the influence of pre-planting encrustation of the seed with an aqueous solution of polyvinyl alcohol. Experiments have been conducted with six hybrids with different ripening periods: the middle-early-ripening Khar'kovskiy 178TV, Bukovinskiy 3TV and Dneprovskiy 247MV; middle-ripening--the Khar'kovskiy 60TV; and middle-late-ripening--Khar'kovskiy 76TV and the VIR-42MV.

Three hybrids (the Dneprovskiy 247MV, the Khar'kovskiy 178TV and the Khar'kovskiy 60TV) have been zoned in Belgorod Oblast. The Bukovinskiy ZTV and the VIR-42MV occupy considerable areas. The Khar'kovskiy 76TV has been selected for an experiment as a hybrid with a high lysine content.

In the opinion of a number of scientists, seed rendered water-repellent or processed by the encrustation method produce an identical field germination rate (75-90 percent) when planted in cold soil ($3-4^{\circ}$) or in sufficiently warm soil. This, they say, makes it possible to plant corn 2 to 3 weeks ahead of the established dates. The results of our tests force us to approach this conclusion with caution, however. When corn is planted on optimal dates in our oblast, cold weather frequently returns and the air temperature drops before it sprouts. This retards germination of the seed and creates the danger of damage from diseases and pests. A polymer film produces a marked protective effect, however.

During the years of the experiments (1981-1983), encrusted seed planted on the usual dates for our zone produced an average increase of 5.1 quintals of grain per hectare over the control crop.

The encrusting of the seed with an aqueous solution of polyvinyl alcohol with the addition of toxic chemicals to protect them against pests and diseases in the soil increases the percentage of plants remaining for harvesting and consequently, also the yield. This is confirmed by data from production tests which we conducted on five farms in various zones in the oblast on an area of 940 hectares. The yield of silage containing the ears of the hybrid Dneprovskiy 247MV, produced from encrusted seed, was an average of 36.4 quintals per hectare greater than that of the control crop (for which the seed had been treated with toxic chemicals alone).

In 2 years of experiments with two planting dates for encrusted seed--April and May--the data obtained favored the May (optimal) date. Encrustation of the seed increased the percentage of plants remaining for the harvest in the April planting by 8.2 percent (compared with the control crop), but it was still 8.3 percent below the crop planted on optimal dates. The same pattern was found with respect to yields. The increase in grain from encrusted seed with an April planting date averaged 6.2 quintals per hectare during the 2 years, but it was still 9.5 quintals below the corresponding figure for the optimal planting date.

Only one conclusion can be drawn from this: even encrusted seed planted in cold soil produces sparse sprouts. What is more, a difference of 1° of soil heat was

enough for moisture to penetrate through the polymer film to the seed in a matter of minutes. Seed planted too early in cold soil swells up and takes a long time to germinate.

Encrustation markedly increases the yield only when the seed is planted in warmed soil. It is our opinion that the planting of this seed should be started 5 to 7 days before the onset of stable warming of the cultivated layer of soil. Furthermore, if there is adequate moisture in the soil, the depth at which the seed is planted can be reduced to 5-6 centimeters. This permits better use to be made of the daytime increase in temperature in the topsoil. Planting the encrusted seed too early (15-20 days ahead of the optimal dates) results in greatly thinned crops and reduced yields in our conditions.

Encrusted seed can be kept for a year without any risk of deterioration of its quality. Today, in accordance with our recommendations, the centralized treatment of the seed stock at the seed grading plant is performed soon after the harvest and the final development of the seed.

The thickness of the plant stand, which depends upon the climatic conditions of the region and the biological characteristics of the variety or hybrid, occupies an important place in the system of agrotechnical procedures for cultivating corn. Since new and highly productive hybrids have been extensively used in Belgorod Oblast in recent years, we have had to deal with the question of optimal plant density at the time of harvesting for ripe grain or silage. This applies particularly to such new hybrids as the Khar'kovskiy 178TV (a grain variety) and the Khar'kovskiy 60TV (a silage variety).

Our 3 years of tests included those same six hybrids. The agricultural practices are those commonly used with the industrial technology. We used the square-cluster sowing method with rows 70 centimeters wide. Four to six seeds were planted in each cluster with a view to the subsequent formation of the prescribed density.

The experiments covered the cultivation of corn for grain with four different plant densities (40,000, 50,000, 60,000 and 75,000 per hectare), and three densities for silage (40,000, 60,000 and 75,000). Two plants were left in each cluster for a density of 40,000, two and three (alternating clusters) for 50,000, three for 60,000, and two, with the clusters 35 centimeters apart, for 75,000.

It was determined that with a density of 40,000 plants per hectare, none of the hybrids grown for grain made complete use of the nutrition and their yields were therefore significantly lower than those of crops with a density of 50,000, 60,000 and 75,000 plants (by 5.7, 6.5 and 7.4 quintals of grain per hectare respectively). With a density of 75,000-80,000, the bushy Dneprovskiy 247MV hybrid produced a yield 1.9 quintals per hectare less than that with a density of 60,000. The other hybrids did not react negatively to such an increase in density.

The Khar'kovskiy 178TV and Khar'kovskiy 60TV, which are new hybrids in the oblast, fell considerably below the standard (the Dneprovskiy 247MV) in grain

yield--4.2-5.3 quintals per hectare--with a plant density of 40,000-50,000 at the time of harvest. No difference in productivity was noted with a density of 60,000 plants per hectare.

And now a word about the density of corn crops planted for silage with the ears at the milk-wax stage of ripeness. For four of the six hybrids--the Bukovinskiy ZTV, the Dneprovskiy 247MV, the Khar'kovskiy 60TV and the Khar'kovskiy 76TV--the density at the time of harvest should not exceed 60,000 plants per hectare. With a density of 75,000-80,000 plants per hectare, the Khar'kovskiy 178TV and VIR-42MV hybrids produce a considerably greater yield of silage than with a density of 60,000 (29 and 30 quintals per hectare respectively).

All of the hybrids fell considerably with respect to silage yield with a density of 40,000 plants per hectare than with 60,000 (by 47.5 quintals per hectare).

The yield of dry matter, however, is the main criterion for assessing corn hybrids raised for green mass with ears at the milk-wax stage of ripeness. The same pattern is observed as for hybrids harvested for green mass.

And so, the Dneprovskiy 247MV and Khar'kovskiy 60TV hybrids, which have been zoned for silage production in Belgorod Oblast, should be cultivated with a density of 60,000 plants per hectare (a seeding rate of 22 kilograms per hectare each), while the Khar'kovskiy 178TV raised for silage should have a density of 75,000-80,000 plants per hectare (a seeding rate of 25 kilograms).

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MAJOR CROP PROGRESS AND WEATHER REPORTING

CORN PLANTING OPERATIONS DESCRIBED

Moscow SEL'SKAYA ZHIZN' in Russian 18 Apr 85 p 2

[Article by V. Lazarev, first deputy chief of the Oblast Agricultural Administration; N. Kislinskiy, candidate of agricultural sciences, and SEL'SKAYA ZHIZN' correspondent A. Trubnikov, Belgorod Oblast: "Corn Is Expanding Its Borders--Grain Production Is the Key Task"]

[Text] This year crop growers in Belgorod Oblast plan to plant 120,000 hectares of corn for grain, which is more than twice as much as last year. Grain production is to be increased by 600,000 tons. Today, the corn growers are completing the final preparations for planting this valuable crop.

The first attempt to obtain ripe corn grain was made 5 years ago in Yakovlevskiy Rayon. Each of 695 hectares produced 31.5 quintals of grain at that time. Last year the farms harvested almost 40 quintals per hectare on 2,200 hectares. During the 4 years the yield from this crop per hectare was double the yield for cereal grains. Such examples are to be found in any area of the oblast. Yields of 50-60 quintals of corn grain per hectare have become the norm for many farms in Rakityanskiy, Shebekinskiy, Chernyanskiy and other rayons.

Last year practically all of the farms raised corn for feed grain. This went a long way toward overcoming the difficulties caused by the drought. The current high goals are thus based on many years of experience and are dictated by the need to increase grain production and eliminate the chronic shortage of feed grain.

F.F. Rezanov, team leader on the Kolkhoz imeni Kuybyshev in Ivnyanskiy Rayon, recently addressed an oblast scientific and practical conference on corn. Sharing his experience in producing high yields, he gave a substantive and knowledgeable explanation of how 60 quintals of ripe grain will be obtained from each of 265 hectares this year. All of the crops will be planted on fields with good predecessors--winter grain crops--on fall-plowed ground turned over at the best time. Fertilizer was applied in the fall. The team leader made special mention of planting dates.

Corn is ordinarily planted when the soil temperature rises to 10-12° at a depth of 10-12 centimeters. In fact, the soil only has to be this warm at the planting

depth. Zoned varieties of hybrids planted during the first 10 days of May produce fully developed grain in the zone under any weather conditions. Crops planted during the second half of May, particularly during the last 10 days, form an ear only when weather conditions are favorable. Earlier planting is undesirable, since the field germination rate of the seed is reduced and sprouting is sparse. The team attaches great importance to plant density. It was 60,000-65,000 plants per hectare at the beginning of the harvest, as it has been in past years. The corn growers have learned from experience that both excessive density and excessive sparseness result in a reduced yield. The combining of early-ripening hybrids (BTs-183, Lozen-250 and KVS-701) with middle-ripening hybrids (Khar'kovskiy-178 and Dneprovskiy-247) makes it possible to begin the harvest earlier.

Operating with the industrial technology, the machine operators plant for final density. They use only high-quality seed, apply herbicides and prevent damage to the plants by pests and diseases. The team has now fully prepared the equipment. The seed has been hauled in. A contract agreement has been concluded with the kolkhoz board. Tractor operators are performing the pre-sowing tilling.

Mechanized units for cultivating corn have been formed on all the farms and have been placed under brigade contract. All of the corn growers have taken a course in the industrial technology. Special commissions made up of party and soviet workers and leading specialists with the rayon agricultural association and other services of the agroindustrial complex have been established in Belgorodskiy Rayon. They have certified the machine operators, specialists and supervisors for the middle level and the farms. The operations necessitated by the production charts have been defended by the team leaders and agronomists in a creative atmosphere. The example of the Belgorod workers is being followed in other rayons.

A number of farms waited for the soil to be in a physical condition making it possible to use disk implements for inserting the Eradikan preparation into the soil were late in beginning the planting. The production charts have now been universally altered: the highly volatile herbicide will be covered within 10-15 minutes after being applied to the soil with fallow or beet cultivators outfitted with a leveling board and with bar rollers or BP-8 spring-tooth harrows. This will make it possible to completely kill annual grasses and destroy 65-80 percent of the dicotyledonous weeds, thereby eliminating the need for harrowing and inter-row cultivation. These operations are planned only in the teams in which soil herbicides are not to be used. Pre-sprouting and post-sprouting harrowing, inter-row cultivation and ridging will also be performed on weed-free crops if there is crusting and cracking. On irrigated sections, the stress is on combining agrotechnical and chemical means of combatting weeds.

In those teams which did not succeed in applying the optimal amounts of mineral fertilizer in the fall, it is planned in the spring to apply 5-10 quintals of ammonia solution, 1 to 1 and 1/2 quintals of anhydrous ammonia or 2 quintals of complex liquid fertilizer per hectare. This will be done as soon as the soil warms up. When they planned this agricultural technique, the crop growers considered the fact that nitrogenous fertilizer greatly increases the corn yield.

A shortage of phosphorus in the soil will be partly made up by applying phosphorus fertilizer in the rows during the planting or as an early topdressing.

Oblast corn growers have laid a solid foundation for the future harvest. All of the fall-plowed land has been turned over, considerably more fertilizer has been applied than in past years, the machinery and implements are in a better state of repair, and the hauling in and preparation of seed for the various hybrids are being completed. Incidentally, the seed farms sold the state 8,500 tons of corn seed last year, which was 1.2-fold more than specified by the plan.

The crop growers understand, however, that the fate of the harvest depends to no less a degree on how the harvesting of the ripe ears is organized and their safekeeping and processing are accomplished. The farms have enough PPK-4 attachments and Khersonets-200 and Khersonets-7 combines to harvest the ears on 95,000 hectares in 20 days and then to obtain pure grain on the rest of the fields. The formation of 104 harvesting and transportation detachments is being completed in the oblast for making highly productive use of this equipment. Each of them has 10-12 modified grain combines with attachments and a Khersonets combine, also a highly productive crusher, a storage hopper and other pieces of equipment.

Only the large specialized farms will have their own harvesting groups. The others will be made up on an inter-farm basis and under the rayon agricultural equipment associations. Last year's experience showed that the group method increases the average daily output by more than 1/4th. Furthermore, the concentrating of machinery and other equipment makes it possible to harvest the corn on a single field in 2 or 3 days and to rapidly grind up the corn mass and place it into storage. This is a certain guarantee against feed losses and spoilage.

Last year oblast industrial enterprises designed hammer-type corn crushers, manufactured 50 of them and delivered them to the farms. Another 250 will be produced by the beginning of the harvest. The IRT-165 round-bale hay grinders, IGK-30B course fodder grinders, ISK-3 grinders and mixers, the hammer crushers from the AVM-0.65, paired DB-5 machines and other equipment are also being used for grinding up the corn cobs and grain.

The experience of the corn growers in Belgorod Oblast have once and for all dispelled doubts about the feasibility of raising corn for grain in the Central Chernozem Zone. This crop makes it possible to greatly increase grain production and to resolve the problem of providing concentrated feed for the animals. Nor can we ignore the fact that the dried cornstalks can be combined with beet tops to make good silage.

It is difficult to combine the units used on large areas of corn into a single production line. The All-Russian Scientific Research and Planning and Design Institute for the Mechanization and Electrification of Agriculture has proposed a good scheme for combining the units for the application of herbicides. It is

not easy to make up the system, however. Additional equipment is needed: a metal tank, a hose and sprayers, an NII-50 pump, a control panel and pipelines. Where does one get this? Remove it from other machines? It would be expedient to produce replaceable equipment for performing the operations involved in the industrial technology and deliver it as a set with the tractor-cultivators.

The machine teams do not have enough tractor-cultivators, cultivators, sprayers, disk or spring-tooth harrows, corn planters or corn harvesters. Production of the PTK-9-35 plows and units for preparing the herbicide solutions, which have performed well, has not been organized. And can we really accept as normal a situation in which the machines for applying mineral fertilizers and herbicides leave areas of high concentrations of the substances in the field due to flaws in the design? Little is being done to resolve the problem of drying and storing the corn grain.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

RECOMMENDATIONS FOR INCREASING CORN SILAGE PRODUCTION

Moscow SEL'SKAYA GAZETA in Russian 19 May 85 p 2

[Article by Candidate of Agricultural Sciences M. Dorofeyuk, senior scientific associate at the Brest Oblast Agricultural Experimental Station, under the rubric "The Specialist's Opinion": "Problems of the Cornfield"]

[Text] Corn has occupied a worthy place in feed production in Brest Oblast in recent years. Its specific portion in the structure of the sown area was almost 2-fold greater in 1984 than in 1981--54,000 hectares, or more than 7 percent. The industrial technology for cultivating this crop is being actively established. The trend with respect to increase in yields is a matter of concern, however. While the silage yield for corn in 1983 averaged 283 quintals per hectare for Brestskiy Rayon and 332 quintals for Berezovskiy Rayon, the corresponding figures were only 162 and 227 quintals per hectare in 1984.

The industrial technology for cultivating corn calls for the complete mechanization of all the technological processes involved in raising it, but it does not eliminate the negative effect of adverse weather conditions. An examination shows that weather conditions last year should be considered average for corn, however. Temperatures were 2-3° below normal in June and July. They were close to normal in May; August and September were also warm months. Data collected over a period of many years show that 5 out of every 10 years are good for raising corn in Brest Oblast, 2 are average and 3 are poor. During the past 10 years, for example, 1976, 1978 and 1980 were poor years. We cannot permit a drop in the production of corn silage, of course. What is the solution?

In my opinion, we made a mistake when we set out on a course of raising corn without adding cold-resistant crops on the cornfields. Naturally, we absolutely must adopt the industrial technology, achieve the necessary density (120,000 plants per hectare) and harvest the corn when the ears are in the waxy or milk-wax phase of ripening, when the greatest yield of feed units and high-quality silage are obtained. In addition to all of this, however, we must have a back-up stock of sunflower or crucifer seed for filling in the crops in case of prolonged cold spells in May and June or even July, and it becomes clear that corn cannot provide the planned yield.

Unfortunately, a barrier has been raised to the supplementary planting of these crops: recommendations for making large applications of Atrasine and Simasine

(more than 4 kilograms per hectare) rules out the possibility of adding crucifer crops to the fields and makes it difficult to add sunflowers. We should therefore extensively adopt such herbicides as Eradikan and Lasso, which break down in the soil within 30-40 days and do not prevent the undersewing of any crop.

In the course of introducing new things, we constantly have to deal with the fact that present calculations of corn mass do not reflect the level of work performed by the farms with this crop. Experiments conducted at the Brest Oblast Agricultural Testing Station, for example, showed that when the KVS-701 corn variety is harvested when the grain is in the milky ripeness phase, 230 quintals or 51.2 quintals of feed units, can be harvested per hectare. By the time the grain had reached the waxy ripeness stage, 94 quintals of water was lost per hectare, and the yield in physical weight was only 196 quintals. The output of dry matter increased by 37.5 percent, however, and the yield of feed units per hectare reached 70.4 quintals. The same pattern was observed for the Kollektivnyy-210 and Bukovinskiy-3 varieties. And so, under actual production conditions, those farms which obtain the highest volume per hectare are frequently among the leaders. No one takes into account, however, the fact that one-third of that volume consists of excess water, that the silage made from it is sour and a small yield of feed units is obtained. In order to objectively assess the work performed by the kolkhozes and sovkhozes with this crop, it is therefore essential to make calculations on the basis of feed units, and inter-rayon feed laboratories should be charged with determining the amount. This is essential not only for objectively assessing the productive capability of a hectare of corn, but also for mixing the proper ration for the animals.

In many cases, a shortage of silage harvesting equipment is the reason why the farms begin harvesting corn for silage at the milky ripeness stage. Associations of the State Agricultural Equipment Association must therefore improve the supply of harvesting equipment for the farms.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

CORN CROP DEVELOPMENT IN STAVROPOL KRAY

Moscow SEL'SKAYA ZHIZN' in Russian 5 May 85 p 1

/Article by S. Timofeyev, Stavropol Kray: "Corn Growers Prepare Their Crop"/

/Text/ Having completed their sowing of early cereal grain crops, sugar beets and sunflowers, the machine operators in Stavropol Kray commenced work out on the corn fields. A zone is being created in the kray for the cultivation of this crop using base farms. Over the next few years, the production of grain corn will reach one million tons.

Even older residents could not recall a time when the agronomists so frequently defined their work plans based upon weather considerations. The task was one of protecting the grain crop areas during any and all conditions and obtaining not less than 24 quintals of grain per hectare, raising the gross grain yield to 4.8 million tons and selling up to 2,020,000 tons to the state. Of this amount, 1 million tons is strong wheat.

How is this task to be solved?

Experience has shown that late sown barley and oats do not furnish good yields. And indeed at this time of year it is even difficult to move the equipment out onto the fields. Thus the decision was made to resow in corn a portion of the barley that was damaged by frost. Intense work carried out both day and night and fine services for the machine operators made it possible for the complexes to accomplish what seemed to be impossible -- within a brief interval of time, to retain moisture on 1.3 million hectares, to repair 348,000 hectares of winter crops, to apply fertilizer and herbicides and to carry out protective work on wheat sowings under cultivation using intensive and improved technologies.

The workers in Petrovskiy Rayon, having selected good hours and days, succeeded in harrowing their fields, including fallow fields, and in sowing their early grain crops earlier than all other workers in the kray. At the Pravda Kolkhoz, the workers required only 2 days for tending 680 hectares of perennial grasses and 2,870 hectares of winter crops. Work teams at the Kolos Kolkhoz completed their sowing in just 72 hours. Many more examples of this nature could be cited.

"Pardon me, but time is fleeting. I am finishing my sowing work today" stated tractor operator V.T. Savin as he summed up the brief discussion and thereafter jumped up quickly into the cabin of his tractor.

Vasiliy Timofeyevich, a well-known machine operator at the Krasnaya Zvezda Kolkhoz in Kochubeyevskiy Rayon, is at the present time carrying out his shift tasks by 120 percent and achieving a high level of quality in all of his operations. Workers in the vicinity are following his example.

Corn is steadily taking over the Stavropol fields and in the near future it will occupy 250,000-300,000 hectares here. And the production of corn grain will increase to 1 million tons, even though the start was made virtually from zero. For many years in a row the seed was imported into the kray from all of the country's republics and more than one half of the areas was sown using non-regionalized varieties and hybrids. And the average yield during the 10th Five-Year Plan amounted to only 14.1 quintals per hectare, the grain production plan was fulfilled by 26 percent and that for seed -- by 45 percent. The concentration of seed sowings began in 1981 and today they can be found at 82 kolkhozes and sovkhozes. During the period which has elapsed since that time, more seed has been produced than the amount produced during the two preceding five-year plans taken together. This made it possible to raise the corn yield by 30 percent.

Having solved the problem of seed production, the workers attached to the kray's APK [agroindustrial complex] have focused all of their attention on the grain. They defined the zones where conditions exist this year for obtaining high yields. The corn belt includes 180 kolkhozes and sovkhozes in Krasnogvardeyskiy, Novoaleksandrovskiy, Izobilnenskiy, Trunovskiy, Kochubeyevskiy and other rayons. Base farms have been singled out in all areas for working out the peculiarities of the industrial technology.

At one base farm, the Izobil'nenskiy Sovkhoz, 60.8 quintals of grain were obtained per hectare last year and by the 1st Department -- 84 quintals. This year the task has been assigned of obtaining 80 quintals from each of 1,000 hectares. The machine operators in the 1st Department applied herbicides to the soil and carried out pre-sowing cultivation on schedule. At the present time, the sowing work is being carried out at a maximum tempo.

For the very first time, the team of A.N. Pogodayev employed the Aet'akhan technology -- combining sowing with the making of slits in the soil -- on 100 hectares. An inspection revealed fine equipment operation and excellent adjustment of the equipment. This work was carefully monitored by two individuals added to the staff of the contractual detachment -- master trouble-shooter V.P. Yakovenko and welder A.N. Pavlov.

The corn growers on other farms are also displaying a fine attitude towards their work. Let us take the Put' Lenina Kolkhoz in Izobelnenskiy Rayon, where over the past 4 years the seed corn areas have been increased from 200 to 1,740 hectares. This year it is to be cultivated by two mechanized detachments working on the basis of a single order. The party committee selected the best machine operators for these detachments, it created teams for providing ideological and domestic services and it organized a competition. In addition to V. Zavodnov, A. Kuprin, I. Soshnikov and N. Kalashnikov, each of whom has performed machine operator work for more than 30 years, there are also young men working in the detachments. For the third year now, the workers at the Rossiya Kolkhoz in Novoaleksandrovskiy Rayon are employing the best technology

for producing grain corn without the use of herbicides. The yields have been increasing from year to year and the expenditures declining as a result of the efforts of the chief agronomist M.G. Solov'yev. For it is he who selects the predecessor crop arrangements and the crop assortment to be used and it is he who defines the methods to be used for cultivating the soil and for sowing. The kolkhoz relies upon use of the Knezhi variety of corn, the seed for which was provided by competitive friends attached to the Bulgarian Cooperative imeni Karaivanov. Initially an experiment was conducted which proved the following: under identical conditions, Krasnodarskiy-303 furnished 45 quintals per hectare and Knezhi -- 128 quintals. This year the Rossiya corn growers have resolved to raise their grain yield to 80 quintals per hectare.

On farms in the corn belt there are more than 220 mechanized detachments and teams, of which number 150 have concluded contractual agreements. The sowing work is being carried out in an organized manner in all areas. The subunits have been supplied with regionalized seed, fertilizer and toxic chemicals. Specialists attached to an experimental plant breeding station of the All-Union Scientific Research Institute of Corn, who have been tasked with controlling the course of this work and furnishing assistance in the various areas, have indicated that all of the opportunities are available this year for carrying out this obligation.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

CORN CROP OPERATIONS IN THE UKRAINE

Moscow SEL'SKAYA ZHIZN' in Russian 5 May 85 p 2

Article by I. Germakovskiy, Chernovitsy Oblast: "Corn Growers in the Field"

Text The rain poured down on the corn fields and cold weather swept in from the Carpathian Mountains. It became necessary to halt the operation of the sowing units. While team members Ye. Dikun, V. Isar, P. Kolesnik and V. Pavlyuk were adjusting the cultivators and sowing machines, team leader I. Sush sought advice from specialists concerning herbicide applications.

Based upon the experience of his own Zhovten' Kolkhoz, which is located in Kitsmanskiy Rayon, he was aware that the traditional and highly volatile Eradikan and Aliroks preparations are not very effective during such weather. He was informed that it would be better to use Agelon, Lasso or Primekstr, since these were more economical and took into account the biological characteristics of the weeds. Over the past 3 years, as a result of using herbicides, considerable success was achieved in destroying weeds and thus it was not necessary to resort to the use of the traditional hoe even once during the growing season. All of the work, from preparing the soil to harvesting and processing the crop, was carried out using mechanisms. And the result was as follows. The average grain yield during this period amounted to 85-90 and last season -- 97 quintals.

"When cultivating corn, everything is important -- herbicides, fertilizers and varieties" stated the chairman of the kolkhoz, war and labor veteran D. Roxhko, "However, the yields are dependent upon how much of these factors was used and how. The faceless formula 'You cannot spoil the porridge with butter' has no meaning for an intelligent individual. We teach our people to base their actions upon the physical-chemical structure of the soil and programmed yields and to provide only as much as is required."

The predecessor crop used for corn on the farm is sugar beets, in behalf of which 45-50 tons of farmyard manure and 450-500 kilograms of active mineral fertilizer are applied per hectare. On those areas where there is a shortage of nutrients, 4-5 quintals of ammonia liquor are applied in the fall simultaneously with making the arable layer deeper. Thereafter, prior to sowing, several more quintals of ammonia liquor are added and during sowing -- solid mineral fertilizer. With such soil dressing, an adequate amount of moisture and good active temperatures, each hectare must provide 100 quintals of grain and 450-500 quintals of fodder.

The density of the plantings plays a great role. Early and midseason Yugoslavian and Hungarian bred hybrids, which have proved their worth, are sown using the dense method -- 12,000-15,000 more plants than the norm established for a hectare. The plan is to retain 75,000 plants for the harvest.

Here, just as on a number of other farms throughout the oblast, in order to increase the growing season, the sowing of corn was started 1-2 weeks earlier than the optimum period using incrusted seed. This experiment proved to be correct. As a result of the fields being treated with measured materials, disinfectants, growth substances and microelements, the seed sustained less damage and infection by a pathogenic microflora. The field germination rate of the seed was raised and a reduction took place in the amount of seed used during sowing. Even today, the machine operators have still not altered this rule. In order to dry out areas which had already been prepared, they decided to use medium harrows. For the purpose of achieving better leveling off of the soil and also for reducing the degree of soil packing, they constantly varied the direction of the pre-sowing cultivation work.

The sowing of corn at the kolkhozes imeni Kriklivets, Den' Urozhay, Peremoga, Zarya Kommunizma, imeni Suvorov and on a number of other farms in the rayon is being completed on a high agrotechnical level. Forty mechanized teams, including 36 contractual ones, have launched a competition to achieve high grain and fodder yields. Last year, an average of 50.9 quintals of corn per hectare was obtained throughout the rayon. This year they have vowed to obtain 52 quintals.

And they are holding to their word. At the present time the rayon's corn growers are celebrating with shock labor the 40th anniversary of the victory by the Soviet people during the Great Patriotic War. Preparations are being made in all areas for carrying out inter-row cultivation and applying top dressings to the plants, the stores of dry and liquid complex fertilizer are being built up and adjustments are being made to the plant feeders. The plans call for the plantations to be harrowed twice and also for loosening of the inter-row spaces to be carried out twice.

The experience of the rayon and also of the best experts in Kermenetskiy, Novoselitskiy and Sokiryanskiy rayons is being made available to all corn growers in the oblast. Progress is already noticeable. For example, last year the proportion of corn in the grain structure was 23.5 percent and the gross grain yield -- 30 percent. The fodder yields have increased. A school for leading experience and retraining courses have been created at the better farms. For the very first time in the history of cultivation of this valuable crop, 1 million tons of corn silage, or 11-12 tons per cow, were placed in storage at Bukovina. This has made it possible to create a strong feed base and to take over a leading position in the republic in the production of livestock husbandry products.

This year 250 mechanized detachments and teams will mount a campaign aimed at obtaining 45 quintals of grain and 300 quintals of fodder from each of 53,000 sown hectares. At the present time, there are 590 sowing crews in operation out on the corn fields, with the majority of them being contractual collectives. They are growing corn using a complex technology which calls for mandatory

applications of herbicides and fertilizer and strict observance of all of the technological methods. The extra-early sowing periods using incrusted seed sown to a depth of 3-4 centimeters and the skillful use of multiple operation units are making it possible to create favorable conditions for obtaining healthy seedlings and for the intensive development of the plants and they also serve to guarantee stable yields. The corn growers in other western oblasts of the Ukraine have also commenced their sowing work.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

CONCERN FOR RAISING GRAIN YIELDS IN NIKOLAYEV OBLAST EXPRESSED

Moscow SEL'SKAYA ZHIZN' in Russian 1 Mar 85 p 1

Article by A. Soldatskiy, Nikolayev Oblast: "Improving the Weight of an Ear"

[Text] The Sovkhoz imeni XXVI S"yezda KPSS specializes in the fattening of cattle and hogs. The fattening of animals requires a well developed field crop husbandry department, with the return from the fodder fields increasing with each passing year. Irrigation plays an important role in carrying out this task. Of 6,200 hectares of arable land, one half is under irrigation. Naturally, the yields here are higher. Last year the farm obtained 75.4 quintals of feed units per hectare and under irrigation conditions -- 100.3 quintals.

"The fact that we use this land for cultivating high yield crops: corn, fodder beets and alfalfa has had an effect with regard to raising the return from such land" emphasized the director of the sovkhoz V.G. Pogorelov, "We obtained more than 65,000 tons of corn fodder alone. The average yield per hectare was 408 quintals. We obtained 2,080 quintals of fodder beets per hectare. The grain yield was 61 quintals per hectare, including corn -- 72 quintals per hectare."

Roughly 3-4 years ago the farmers were satisfied with obtaining yields of up to 50 quintals of corn grain per hectare and today they have assigned themselves the task of obtaining a yield of 100 quintals.

"In order for the ears to increase in weight" continued the director, "We must rely upon the use of improved agricultural practices. We must make greater use of local fertilizers. Each field must be provided with mineral fertilizer in keeping with the programmed yield.

At the present time, they are continuing to move organic fertilizer out onto the farm's fields. The members of contractual collectives are studying the principles of the agricultural practices and also agricultural economics. With regard to the equipment, it has already been prepared.

In the southern part of the Ukraine, the agricultural crop yields are dependent to a large extent upon the winter supplies of moisture. This year the fields here were covered by a good layer of snow, a departure from the usual state of affairs. Thus there is a chance that the gross grain yield will be increased by means of the spring crops and particularly by means of corn. The oblast's

farmers are striving not to overlook this opportunity. On all farms, the structure of the area under crops has been carefully reexamined in the interest precisely of increasing the corn fields. This year the oblast's farmers have resolved to obtain not less than 500,000 tons of corn grain.

Prior to undertaking this task, they studied the experience that had been accumulated and they weighed the available reserves. The specialists are of the opinion that more efficient use must be made of irrigation. The experience of leading workers has shown that under irrigation conditions a corn grain yield of 100 quintals is the norm. For example, last year a yield of 126.9 quintals of corn was obtained per hectare under irrigation conditions at the Sovkhoz imeni XXV S"yezda KPSS. Although this crop occupies 21.4 percent of the grain structure here, its proportion of the gross yield of final product amounted to 41.6 percent. This year the sovkhoz's farmers have vowed to obtain 125 quintals of corn from each irrigated hectare.

Many examples can also be found throughout the oblast of high yields being obtained from non-irrigated land. During the first 3 years of this current five-year plan, the average corn grain yield at the Kolkhoz imeni Shevchenko in Domanevskiy Rayon was 52.9 quintals per hectare. Last season this level was raised to 57 quintals. An even greater success was realized by the team headed by A. Rudenko, which obtained 64 quintals of corn grain from each of 150 hectares. The team headed by A. Borisov obtained 63 quintals.

Success is achieved mainly through skillful organization of the work. Clear-cut conditions have been established for issuing material incentives to machine operators, with only the final results being taken into account. Corn is being cultivated using the industrial technology. By strictly following the recommendations of the agronomists, the corn growers with each passing year are increasing the return being realized from a hectare of sowing. This year they have selected just such a goal for themselves -- to obtain 65 quintals of grain from each hectare of non-irrigated land.

This year, 27,000 hectares have been set aside for grain corn to be grown under irrigation conditions throughout the oblast. The collectives responsible for this area have been assigned the task of achieving 100 quintal yields.

This year the farmers in Nikolayev Oblast have vowed to raise the gross yield of grain to 2.5 million tons, with 500,000 tons of this amount to be obtained by the corn growers. Thus the ears must be made heavier than ever before!

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MAJOR CROP PROGRESS AND WEATHER REPORTING

FIRE FIGHTERS BATTLE FOREST FIRES IN FAR EAST

OW081311 Moscow Television Service in Russian 0830 GMT 8 Jul 85

[From the Vremya newscast; A. Verigin video report including an interview with E. P. Davidenko, deputy chief of the Central Base for Aerial Forest Protection of the RSFSR Ministry of the Forestry Industry]

[Text] A serious fire situation has arisen in the north of Irkutsk Oblast and in western and southwestern regions of the Yakutsk ASSR.

[Begin video report] [Video shows pilot in aircraft, views of burning forest, parachuting fire fighters and explosives team rappelling from MI-8 helicopter into burning forest]

[Verigin] The exact reason for this fire will be determined later. However, according to statistics 50-90 percent of the forest fires are caused by people. Dry and hot weather has prevailed in regions of Yakutiya and the Far East during the past month, and as a result a great fire danger exists.

At this hour 95 fires have been reported in the Yakutsk ASSR alone, of which 25 are major fires covering an area of several thousand hectares.
[Video shows blazing forest]

[Davidenko] About 98 percent of the fires breaking out in the republic are put out quickly, are confined to small areas, and handled efficiently. But in some cases we are unable to handle fires with our resources and put them out rapidly. [Video shows Davidenko in uniform against large-scale wall map showing region with fires pinpointed with red markers]

Presently several fires have spread over large areas in places difficult to reach. They are extremely difficult to put out due to the mountainous and inaccessible nature of the areas. Besides our own personnel -- our regular staff workers -- who are working there, we also provide help from other regions of the USSR. Presently some 320 people are working and helping in the Yakutsk ASSR from Krasnoyarsk and Khabarovsk krays, the Urals, and western Siberia. Another 300 odd people are working in Irkutsk Oblast. Our professional parachutists and airborne firefighters are helping.

Naturally extraordinary fire fighting commissions are working on the spot -- an oblast commission in Irkutsk and a republic one in Yakutsk. These staffs are meeting and adopting decisions, but unfortunately these decisions are not always reflected in practice. For example, the Council of Ministers of the Yakutsk ASSR and the extraordinary fire fighting commission decided to assign 25 heavy tractors and bulldozers for fighting the fires. However this decision is not always being implemented on the spot. [Video shows altitude photo of forest fires] [end video report]

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MAJOR CROP PROGRESS AND WEATHER REPORTING

AGRICULTURAL DEVELOPMENTS FOR 9-10 JULY

ID110332

[Editorial Report] The following is a compilation of reports on agricultural developments in the USSR carried by Moscow Domestic Service in Russian on 9-10 July 1985. Times of broadcasts are given in parentheses at the end of each item.

9 July

Machine operators of the Don are stepping up the rates of harvesting. They have laid wheat into swathes on the first 500,000 ha. (1500)

Harvesting of winter crops is under way in Northern Ossetiya, with first 10,000 ha barley already threshed. (1530)

Harvesting of cereals is gathering pace in Moldavia, with first 1,000 ha barley cut in central zone of republic. (1530)

Millionth tonne haylage has been prepared in Kirghiziya for winter. Laying-in of coarse feed of all kinds has reached almost 1,500,000 t. (1530)

10 July

Harvesting of eared crops has begun in Moldavia. (1330)

Bread grains in Uzbekistan have been harvested on half a million ha up to this morning; this is four fifths of the republic's winter crops acreage. Fergana valley farms have ended harvesting, while the work is nearing an end in Bukhara and Surkhan Darya Oblasts. (2230)

Farms in Kurgan Oblast have procured 100,000 tonne of hay. (2230)

CSO: 1824/471

MAJOR CROP PROGRESS AND WEATHER REPORTING

AGRICULTURAL DEVELOPMENTS FOR 11-12 JULY

ID130343

[Editorial Report] The following is a compilation of reports on agricultural developments in the USSR carried by Moscow Domestic Service in Russian on 11-12 July 1985. Times of broadcasts are given in parentheses at the end of each item.

11 July

A new irrigated area of 2,000 hectares has been created in Omsk Oblast for feed crops. Irtysh water is supplied by canals to the new area. There are about 100,000 ha of irrigated pasture now in Omsk Oblast. (0001)

Grain has been reaped on an area of 54,000 ha to date in Tajikstan, over a third of the area of winter wheat and barley. Since the start of the harvest over 66,000 metric tons of good quality grain has been threshed. Harvesting is going more quickly than last year. The land freed is being plowed and sown with corn; about 10,000 ha of corn has already been sown. (0200)

Grain has been harvested from 500,000 ha in Uzbekistan, four-fifths of the area. (0716)

Orenburg Oblast: Winter crops occupy an area of approximately 500,000 ha here. Aerial foliar top dressing is nearing completion. (0800)

Altay Kray: 22,000 Sibiryak and Niva combines are ready for the fields here -- 90 percent of the total combine pool. (0800)

Omsk Oblast: 300,000 metric tons of hay have been procured here to date; a third of the total planned. (0800)

Mass harvesting of cereals has begun today in Alma-Ata, Toldy-Kurgan and Kzyl-Orda Oblasts. A better harvest than last year's has been cultivated despite unfavorable weather conditions, with every hectare producing one-quarter and in places even one-third more grain than in the previous harvest. Harvesting conditions are complex -- Hot and dry weather has led to simultaneous ripening of grain on vast areas. (1300)

Mass cutting and threshing of Kuban winter wheat began today. In Krasnodar Kray about 500,000 ha, a third of the winter lands, have been allocated to wheat being cultivated using intensive technology. (1500)

Massive harvesting of grain is in progress in all rural areas of Rostov Oblast. (1730)

Grain crops in the USSR have been harvested on about five percent of their area. (1830)

12 July

Farmers in Kazakhstan have today finished priming fallows. The republic has nearly 5,000,000 ha of underwinter fallows. These lands have now been weeded and given mineral fertilizer. Plowing of autumn fallows has started. In southern oblasts where cereals have largely been harvested, the soil is being shallow-tilled for winter crops. This year over 20,000,000 ha of autumn fallows are to be plowed. (0800)

Gathering of sugar beet seeds has begun in Chu Valley. The seeds are sown on more than 13,000 ha at present. The yield is good. Kirghiziya has become a major supplier of seeds for Russian Federation farms. This year alone the republic's farmers have undertaken to supply not less than 15,000 metric-tons high quality seeds. (1330)

Procurement of fodder is in full swing in collective and state farms. The second cutting of sown grasses is ending in the valley regions. More than 350,000 ha are now occupied by alfalfa [word indistinct]. Feed procurers have undertaken to collect three or four harvests from this area, and to obtain 90-100 percent hay. More than 1,500,000 metric tons of succulent feed has already been obtained for public cattle. (1330)

Sown and natural grasses have now been harvested on half the land on the country's collective and state farms. Many farms and even whole republics these days are coming to the end of the first mowing. This is how the situation stands in the Baltic republics, Belorussia and the Ukraine. But in many farms of the non-Chernozem zone grasses have as yet been mowed on a small area, while the best times for mowing them are passing by. Collective and state farms are also lagging behind in laying in laying in fodder in the republics of Central Asia, Armenia and Georgia. (1530)

In Amur Oblast over one-third of the required amount of vitamin-rich grass meal and over 70 percent of hay have been laid in. Mass production of haylage has begun. (1530)

The uzgenskaya sinyaya and tokmakskaya varieties of alfalfa, developed in Kirghizia, have a high yield in any agricultural zone of the country. The republic's farmers, who have today begun the seed harvest are helping

to create this kind of sowing everywhere. They are threshing about two quintals of selected grain from each of 48,000 ha. The seed-growers of Kirghizia will send more than 6,000 metric tons, enough for a feed growing area of almost 1,500,000 ha, to specialized farms of the Baltic republics, Belorussia, the non-Chernozem zone and other oblasts of the Russian Federation. (1530)

The delivery of fresh vegetables to Moscow will be doubled during the World Youth Festival. Later ripening varieties are being planted where carrots, turnips and cabbage have already been harvested in Georgia, thus giving two and often three harvests per field annually. (1530)

Harvesting of cereals in southern Kazakhstan has taken place on half the sown area. An average yield of over 30 q/ha is occurring in Chimkent Oblast; on more than half the area of that oblast cereals have been harvested to date. Dzhambul has begun grain harvesting. Mechanizers are in the fields in Alma-Ata and Taldy-Kurgan oblasts. Harvesting will soon begin in the northern oblasts. (1530)

In Zaporozhye Oblast strong strains of wheat are being harvested. (1800)

Tajikistan: Grape harvest has started in southern rayons. Pledges make provision for a harvest of at least 170,000 metric tons this year.

CSO: 1824/471

MAJOR CROP PROGRESS AND WEATHER REPORTING

AGRICULTURAL DEVELOPMENTS FOR 13-14 JULY

LD150116

[Editorial Report] The following is a compilation of reports on agricultural developments in the USSR carried by Moscow Domestic Service in Russian on 13-14 July 1985. Times of broadcasts are given in parentheses at the end of each item.

13 July

The first thousands of metric tons of grain of valuable wheat varieties have been delivered to state granaries in Zaporozhye Oblast. On over 100,000 hectares this crop was for the first time cultivated using intensive technology. (0104)

By this morning sown and natural grasses had been cut from the first 500,000 he in Omsk Oblast. This is over one-third of the planned areas. (0204)

Moldavia's procurement centers have started receiving grain. (1800)

The new harvest of grains has begun in Moldavia. It is hoped to produce 800,000 metric tons of grain this year in the republic. (1830)

Harvesting of the main winter crop, wheat, has started in the Crimea and is going well. (2230)

14 July

Moldavian procurement workers have started receiving new season grain. The harvesting campaign, which has been complicated by downpours, has required them to observe a round-the-clock work timetable. This year the capacities of the republic's grain reception enterprises are designed for processing a considerably larger quantity of grain than arrives during the most strenuous harvesting days. It is planned to fill the republic's granaries with 800,000 metric tons of grain this year. (0001)

There is still 1 and 1/2 months to go before harvesting starts in the virgin lands. But preparations for the harvest are now essentially being completed here at the mechanized thrashing floors of state and collective farms, elevators and motor transportation enterprises.

This has been reported by our correspondent from Tselinograd. More than 80 percent of the combines has been made ready at Tselinograd Oblast's farms. ((0001)

Checheno-Ingushetia started large-scale harvesting of winter wheat today. A good harvest has been grown this year. About 30-35 quintals per ha are being obtained from irrigated lands here. Winter wheat is the kray's main grain crop. (0400)

Biannual plans for the sale of milk to the state in Orel Oblast as a whole have been prefulfilled. Collective and state farms have delivered 212,000 metric tons of milk to procurement centers; this is 10 percent above the task. Quality of produce has also increased. (0400)

Harvesting of winter wheat has started in the Crimea. (1100)

In Orel Oblast sown and natural grasses have been harvested on one-half of the lands, which is 165,000 ha. (1100)

More than 17,000 combines and some 15,000 harvesters are to be used for harvesting in Omsk Oblast. (1530)

Brest Oblast mechanizers are readying equipment for the grain harvest. Combines are ready for a difficult harvest because of frequent rain. (1900)

Feed procurement for public livestock has begun in Magadan Oblast. (1800)

CSO: 1824/471

MAJOR CROP PROGRESS AND WEATHER REPORTING

BRIEFS

WINTER WHEAT CULTIVATED--Omsk, 23 [Mar]--A larger and larger number of kolkhozes and sovkhozes in the oblast are demonstrating a practical interest in cultivating winter wheat under Siberian conditions. For the fifth year in a row Luzinskiy Sovkhoz has been cultivating Mironovskaya-808 with success. Last year on each of 800 hectares winter wheat yielded 32 quintals of grain and all of it was of high quality. The conditions of the current severe winter did not weaken the resolve of sovkhoz specialists to continue increasing wheat yield. Crop samples have shown that the condition of crops corresponds fully to calculations for repeating a large harvest this year. [By M. Sil'vanovich] [Text] [Moscow SELSKAYA ZHIZN in Russian 24 Mar 85 p 1] 8228

RETAINING SNOWMELT--Novosibirsk, 11 [Apr]--Siberian fields are coming alive. The warm weather is accelerating the melting of snow. Farmers of the Kulunda zone are already working according to the spring schedule. Fields resound with the hum of tractor motors--the retention of snowmelt has begun. This work is being actively carried out by the farmers of Baganskiy, Chistoozernyy, Karasukskiy, Krasnozerskiy and other rayons of Kulunda. Each day this work is carried out on hundreds of hectares by Ivanovskiy and Andreyevskiy sovkhozes of Baganskiy Rayon, by Rodina, imeni Uritskiy and Sibir kolkhozes of Chistoozernyy Rayon and by many others. [By P. Chernov] [Text] [Moscow SELSKAYA ZHIZN in Russian 12 Apr 85 p 1] 8228

SPRING FIELD EFFORTS--Novosibirsk Oblast--Spring decides many things. It is no accident that the people say, "Sow grains, don't sleep; if you reap you will be watchful." Novosobirsk farmers are combatting the caprices of nature with flexible agrotechnology, a precise organization of labor and highly efficient use of equipment, especially since this year they are introducing intensive technology on 700,000 hectares, or half of wheat fields. This obliges them to act in a business-like manner, energetically and rapidly. Having received 2-3 times more fertilizer than before, having educated cadres ranging from directors to machine operators and having prepared themselves for sowing operations, farmers have begun sowing on a wide front while taking into consideration all factors contributing towards an increase in the productivity of grains. On stubble fields moisture is retained by means of BIG-3 needle harrows in combination with ring rollers or hole drills equipped with needle discs. On banks moisture is conserved and soil is cultivated by means of tooth harrows. Maximal efforts are devoted to the struggle against weeds,

with the use of a technology that will eliminate them on each individual field. On banks, as a rule, KPS-4 cultivators are widely used; on non-sloping land--KPE-3.8 cultivators. The spring labor of Novosibirsk farmers is tenacious. They are sparing no effort for the future harvest. They are convinced that in the fall the labor that has been put into each field will yield joy. [By P. Chernov] [Excerpts] [Moscow SELSKAYA ZHIZN in Russian 25 May 85 p 1] 8228

HARVESTING BEGINS--Dagestan, Checheno-Ingush ASSR--Even large Ikaruses from far away stop at the roadsides for a few minutes. Passengers step out onto the stubble, where the first swathes of harvested grain have just been formed. There is something fascinating about the golden grain which was first to mature this year and about the tight sheaf with its luxuriant spikes standing next to the road. This is the first sheaf! It is always a joy. Simultaneously with grain harvesting the region is beginning the second of six planned alfalfa harvests; the first mowing satisfied half of the plan for the procurement of coarse feeds and now there is a real possibility to overfulfill the plan greatly. The load on equipment increased even more, but in the region there is a single precisely-functioning engineering-technical service; a central RAPO [Rayon Agro-Industrial Association] dispatcher reacts with sensitivity to all changes in the pulse of the current harvest. Selective harvesting has begun on the shores of the Terek in Checheno-Ingush ASSR. [By A. Podolskiy] [Excerpts] [Moscow SOVETSKAYA ROSSIYA in Russian 20 Jun 85 p 1] 8228

FIELD WORK BEGINS LATE--The late spring delayed the start of field work in the North Caucasus day after day. As soon as the snow melted sowing units moved into the fields of this foothill valley simultaneously with soil cultivation equipment and fertilizer spreaders. There aren't enough daylight hours and machine operators are adding a good part of the still fairly cool nights. A well-coordinated, energetic start enabled the majority of kolkhozes and sovkhozes of Kabardino-Balkar ASSR to make up for the time lost due to weather. As reported by the agricultural minister of the republic, V. D. Beslaneyev, spring operations are now on the best agrotechnical schedule. [By A. Podolskiy] [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 16 Apr 85 p 1] 8228

ALFALFA HARVEST COMPLETED--Ordzhonikidze, 13 [Jun] (TASS)--The first alfalfa harvest was completed yesterday in the enterprises of the Mozdoskaya Steppe--a large agricultural zone in North Osetia. This feed crop is cultivated on irrigated lands here. Specialized subdivisions which have adopted collective contracts are involved in raising alfalfa. As a result, a good harvest was collected in the optimal period of time. Following the mowing and removal of green mass from the fields, machine operators top-dress plantations in order to produce four harvests this year. Frequent rains are hindering the work of feed procurers. Nevertheless, kolkhozes and sovkhozes have armed themselves

with the so-called "ventilation" technology--over 70 percent of the hay is dried to completion in special sheds and under awnings. Over 100 mechanized feed shops are working at full capacity. In the autonomous republic it has been decided to procure over 1 million tons of coarse feeds, hay, haylage, vitamin-rich meal and granules for public livestock raising. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 14 Jun 85 p 1] 8228

SELECTIVE BARLEY HARVESTING--Ordzhonikidze (TASS)--Machine operators of kolkhozes and sovkhozes located in the river valleys of the Terek and Ardon have begun selective harvesting of barley. The two-stage harvesting method is being used here by Ipatov complexes. Control threshing yields 35 quintals of hay per hectare. In order to accelerate the pace of harvesting enterprises are maneuvering equipment widely; the work of combine and reaper teams has been organized skilfully according to the watch method. [Text] [Moscow TRUD in Russian 2 Jul 85 p 1] 8228

BARLEY HARVEST--Groznyy, 24 [Jun]--In Gudermesskiy Sovkhoz of Gudermesskiy Rayon farmers began harvesting winter barley in an organized manner. Harvesting is being carried out in two stages, which enables us to decrease harvest time to a minimum. Combine operator's Sh. Selimsultanov and P. Litvin are achieving large yields and excellent quality during harvesting. The harvest is a pleasing one. The enterprise is producing 40 quintals of grain on each of 380 hectares. Kolkhoz imeni Lenin and Komintern Kolkhoz of Shelkovskiy Rayon are also carrying out barley harvesting successfully. [By S. Lorsanukayev] [Text] [Moscow SELSKAYA ZHIZN in Russian 25 Jun 85 p 1] 8228

GRAIN HARVEST IN DAGESTAN--Makhachkala, 17 [Jun] (TASS)--The harvesting period has arrived in the grain fields of Dagestan. On the lower reaches of Sulak River--the main granary of the autonomous republic--the enterprises of Kizilyurtovskiy Rayon have begun to harvest winter barley. Every hectare of fields yields 40 quintals of grains. Farmers are being helped by their partners in the agroprom [Agricultural industrial association]--reclamation workers, agrochemists and repair services of raysel'khoztekhnika [Rayon Agricultural Equipment Association]--to produce large yields regardless of weather conditions. Harvest equipment is ready to move into wheat fields too. Harvesting tactics have been established for each field depending on the condition of crops. [Text] [Moscow SELSKAYA ZHIZN in Russian 18 Jun 85 p 1] 8228

USE OF INDUSTRIAL TECHNOLOGY--Nikolayev, 18 Feb--This year the oblast's farmers have vowed to raise the gross corn yield to 500,000 tons. Toward this end, they are searching for reserves, the use of which will make it possible to raise the yields. One such reserve is use of the industrial method, which is to be introduced into operations on more than 106,000 hectares. At the present time, training has been organized for the corn growers enabling them to study the industrial technology in detail. In Zhovtnevyy Rayon, for example, 6,150 hectares have been set aside for corn. The plans call for 50 quintals of grain to be obtained from each hectare and an even greater yield under irrigation conditions. [by A. Soldatskiy] [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 19 Feb 85 p 1] 7026

HURRICANE IN AZOV AREA--Ten thousand persons, 4,000 children among them, have been evacuated from the coast of the Sea of Azov in the south of the USSR. A flood struck the area as the result of a heavy rain and a storm that swept the sea at night. Sea level rose by 3 and 1/2 meters. Water flooded the coast, where dozens of holiday homes, hotels, and children's resorts are located. As the hurricane raged, holiday makers were taken to safety by buses, lorries, and tractors. No one was hurt. [Text] [Moscow World Service in English 1100 GMT 11 Jul 85]

TOP-DRESSING BEGINS--Kurgan--Machine operators of the southern part of the oblast have begun top-dressing winter rye with nitrogen fertilizers. Pilots are helping them in this. [Text] [Moscow TRUD in Russian 10 Apr 85 p 1] 8228

PROGRESSIVE METHOD USED--Kurgan--The oblast's grain farmers are now preparing to introduce intensive technology for cultivating spring wheat on 550,000 hectares, or half the area allocated for this valuable food crop. Fertilizers and seed of the best varieties have been stockpiled, and 400,000 hectares of clean fallow and 150,000 hectares of the best predecessors have been allocated for spring wheat. Directors and specialists of enterprises and workers within the agro-industrial complex have received training in the agricultural institute and in the NII [Scientific Research Institute] of the Grain Industry. Link and brigade leaders are now studying in the Kurtamyshskiy and Shadrinskiy technical schools and in the oblast school of management cadres. A compulsory agrotechnical course has been organized in kolkhozes and sovkhozes. [By I. Shevchenko] [Text] [Moscow SELSKAYA ZHIZN in Russian 1 Mar 85 p 1] 8228

PREPARATIONS FOR SOWING COMPLETE--Kurgan, 29 [Mar]--Transurals fields are still covered with snow, but the day is near when machine operators bring their equipment onto them. Today agronomic councils on the coming sowing period are being carried out in oblast rayons. Here significant attention is given to the intensive cultivation of agricultural crops. This method will be used to cultivate just spring wheats on 550,000 hectares in the oblast. According to calculations, this will provide an additional 300,000 tons of high-quality grain. A significant contribution towards increasing grain production will be made by large Shadrinskiy Rayon. All conditions have been created for the fulfillment of goals--fallow and other good predecessors, fertilizers and seed are all available. Machine operators are ready to move into the fields. [By I. Shevchenko] [Text] [Moscow SELSKAYA ZHIZN in Russian 30 Mar 85 p 1] 8228

EMPHASIS ON FALLOW, FERTILIZER--Kurgan, 30 [May]--The oblast's kolkhozes and sovkhozes are completing the sowing of spring crops; 997,000 hectares of wheat have been sown in the best time and with high quality. Many enterprises did not receive the planned mineral fertilizers and thus are applying them to shoots as they arrive. Simultaneously with sowing farmers are concerned about

425,000 hectares of fallow fields. They were cultivated first with surface plows and harrows and are now being plowed as heavy tractors become available. In Yurgamyshskiy Rayon, following last year's experience, the maximal number of tractors is being put into plowing and work is being organized according to the watch method. [By I. Shevchenko] [Text] [Moscow SELSKAYA ZHIZN in Russian 31 May 85 p 1] 8228

AVIATORS AID IN HARVEST--Kurgan, 17 [Jun]--There has been abundant rainfall in most of the oblast's rayons. The coming warm weather creates favorable conditions for the development of agricultural crops. At the same time, weeds have begun to grow abundantly. The oblast's agrochemical service intends to treat 850,000 hectares of crops with herbicides, including almost half the area with the help of Sel'khozkhimiya and aviation. In many rayons this work has already begun. The machine operators of Shadrinskiy, Safakulevskiy, Kurtamyshskiy and other rayons are carrying out chemical weeding of crops most successfully. [By I. Shevchenko] [Text] [Moscow SELSKAYA ZHIZN in Russian 18 Jun 85 p 1] 8228

ALTAY KRAY FIELD WORK--Today Altay fields look like an enormous beehive. Almost 100,000 machine operators have moved various equipment into the fields. The lessons of the last cold, prolonged spring, which resulted in delays in the maturation of buckwheat and late-maturing wheat varieties in moist zones, were particularly taken to heart today. This spring has turned out to be no better, and Altay grain farmers must carry out sowing on over 4 million hectares. Wheat must be sown on 1.2 million hectares using intensive technology alone! There is one goal for all--to complete sowing by 1 June. In Troitskiy Rayon a large area was not plowed in the fall. Now it is being cultivated using broad units, with work proceeding in two shifts. The best lands and predecessors--fallow, sod of perennial grasses, fields sown previously in peas and sugar beets--have been earmarked for intensive cultivation of wheat, which will occupy one-fourth of grain area in the region. Szs-2.1 sowers equipped with special plowshares, which have acquired the name "Altay," are used widely here to apply fertilizer. Unfortunately, the intensive pace of field work is often interrupted by vexing problems. The main one is the poor quality of new equipment. K-700 tractors often break down; there have been instances of breakdowns of products from Altay Tractor Plant. When I asked D. I. Burlak, chairman of Velikiy Oktyabr Kolkhoz, which increased grain yield from 15 to 22 quintals per hectare in one year of the current five-year plan, what is still lacking for further growth in productivity, his answer was highly efficient and dependable equipment. Because of its absence Krutikhinskiy, Tyumentsevskiy, Khabarskiy and a number of other rayons still have not organized fertilizer application, which hinders the pace of sowing wheat according to intensive technology. Spring field work is in full swing in the Altay. Following the eastern and foothill regions, mass sowing of spring grains was begun by the enterprises of Kulunda steppe--the main supplier of high-quality wheat. Sowing units are already on their fourth million hectares. [By A. Torichko] [Excerpts] [Moscow SELSKAYA ZHIZN in Russian 28 May 85 p 1] 8228

RETAINING MOISTURE--Barnaul, 7 [Dec]--Early winter gladdened grain farmers of the steppe Kulunda region--fields were immediately covered with a thick layer of snow. Most of the enterprises in Uglovskiy, Mikhaylovskiy, Kulundinskiy,

Slavgorodskiy and other rayons began carrying out winter agrotechnical measures immediately. [By A. Torichko] [Text] [Moscow SELSKAYA ZHIZN in Russian 8 Dec 84 p 1] 8228

SNOWMELT RETENTION--Barnaul, 19 [Apr]--Hundreds of special units for the retention of water from melted snow are working on Altay fields today. In Kamenskiy Rayon, located on the left bank of the Ob River, water from melted snow has already been retained on 15,000 hectares. On the sandy areas of Rubtsovskaya Steppe pre-sowing cultivation is already beginning. Machine operators of Nikolskiy and Troinskiy sovkhozes were first to begin top-dressing of perennial grasses and the selective harrowing of soil. [By A. Torichko] [Excerpts] [Moscow SELSKAYA ZHIZN in Russian 20 Apr 85 p 1] 8228

WHEATS BEING SOWN--Barnaul, 17 [May] (TASS)--Today the machine operators of Kulunda Steppe--the kray's main granary--began sowing the main grain crop--spring wheat. Field work is being carried out by large mechanized complexes which extensively utilize the watch method and brigade contracts. Over 4 million hectares will be occupied by grains in the Altay this year. Most of the area will be in strong and durum wheats. In order to achieve large yields, enterprises allocated significant areas to new varieties that have adapted well to local conditions; zonal scientifically-based farming systems are being utilized. Wheat will be cultivated according to intensive technology on over 1 million hectares. This will enable us to achieve a 50-quintal increase per hectare. [Text] [Moscow SELSKAYA ZHIZN in Russian 18 May 85 p 1] 8228

CROP CARE--Barnaul, 15 [Jun]--Altay grain fields are totally covered by a green carpet. On all 2 million hectares grains and legumes have produced uniform shoots. This gladdens grain farmers, but does not calm them. A great deal remains to be done before harvesting, and the main thing is the struggle against weeds and plant diseases and pests. Pre-shoot and shoot harrowing of crops is already being completed on the second million hectares, and on 1.2 million hectares of wheat cultivated according to intensive technology this work has been totally completed. For subsequent treatment with herbicides 670 land sprayers have been readied. Agricultural aviation will participate in this important work on the large land areas of Kulunda Steppe and other regions in the kray. Runways have already been prepared for 50 airplanes and five helicopters and herbicides and fertilizers have been brought in. [By A. Torichko] [Text] [Moscow SELSKAYA ZHIZN in Russian 16 Jun 85 p 1] 8228

IRRIGATION BEGINS--Barnaul--In the Altay the time for summer irrigation has arrived. About 1,200 pumping stations and over 2,000 sprinklers have begun operating at full capacity. With their help it is planned to irrigate 110,000 hectares of land occupied mainly by feed crops. [Text] [Moscow TRUD in Russian 4 Jun 85 p 1] 8228

SECOND STAGE FIELD OPERATIONS--Barnaul, 8 [Jun]--On Altay fields the sowing of grasses for the green conveyor, root crops, corn for silage and other feed crops is continuing. On grain fields care of oats, barley and wheat crops has already begun. Special attention is being given to plots being cultivated according to intensive technology. The first agricultural technique--pre-shoot and post-shoot harrowing--has already been completed on 1 million hectares. [Text] [Moscow SELSKAYA ZHIZN in Russian 9 Jun 85 p 1] 8228

AZERBAYDZHAN CORN PLAN--Saatly (Azerbaydzhana SSR)--Yesterday the farmers of Azerbaydzhana commenced their mass sowing of corn. The goal of the corn growing collectives -- to obtain not less than 80 quintals of grain and more than 200 quintals of green feed from each hectare. [Text] [Moscow TRUD in Russian 2 Apr 85 p 1/ 7026

SIMULTANEOUS MINERAL FERTILIZER APPLICATIONS--Ordzhonikidze--The mass watering of corn sowings has commenced on farms in the North Osetian ASSR. Mineral fertilizers are being applied simultaneously to the soil. [Text] [Moscow TRUD in Russian 7 Jun 85 p 1/ 7026

ORENBURG OBLAST CORN SOWINGS--Orenburg--The mass sowing of corn has commenced in Orenburg Oblast. This year, for the very first time, this crop will be grown on a large scale for grain purposes. This will make it possible to obtain tens of thousands of additional tons of corn grain for forage purposes. The farmers will do alright even during unfavorable weather conditions. The fodder obtained using the intensive technology on the corn plantations will be used for silage. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 19 May 85 p 1/ 7026

PROTECTIVE FILM FOR CORN--Saratov, 13 May [TASS]--The farmers of kolkhozes and sovkhozes in Saratov Oblast have commenced their mass sowing of corn for grain purposes. The corn growers in Engel'skiy Rayon are succeeding in carrying out this work. At the Zavety Il'icha Kolkhoz, there are fields on both sides of the road. On the left, on well tilled autumn plowed land, there are grain drills and on the right -- corn drills. This spring the sowing of early and late crops is being carried out simultaneously. It bears mentioning that a new innovation is being employed in the system of agricultural measures for this year's sowing campaign -- use is being made of corn seed that is covered with a protective film. Such seed can withstand the effects of prolonged cold weather, pests and diseases. Seed covered by such a film is being used by many farms in Saratov Oblast and especially by those which are growing forage crops under irrigation conditions. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 14 May 85 p 2/ 7026

EARLY CORN SOWINGS--Kurgan--Early corn sowings are being carried out by farmers in all of the oblast's rayons. More than 200,000 hectares of harvested arable land have been set aside for this forage crop. [Text] [Moscow TRUD in Russian 12 May 85 p 1/ 7026

MASS CORN SOWINGS--Vladivostock--Farmers in the Maritime Kray have commenced the mass sowing of the kray's chief forage crop -- corn. This work was started 1 week earlier than usual. This became possible owing to the fact that the seed was "dressed" in advance in a polymer film. The decision was made to use this seed on not less than 50,000 hectares this year -- an area almost two times greater than that for last year. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 12 May 85 p 1/ 7026

GRAIN TECHNOLOGY EMPLOYED--Kuybyshev, 1 Jun--For the very first time, the kolkhozes and sovkhozes in Volzhskiy Rayon sowed 2,000 hectares of corn for

grain purposes. The sowing was carried out using the wide-row method and seed that was treated in advance with film forming preparations. Many of the oblast's rayons are converting over to use of the grain technology for the cultivation of corn. This year its sowings will occupy 50,000 hectares. [by V. Dedikov] [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 2 Jun 85 p 1] 7026

CORN SOWING COMPLETED--Ordzhonikidze--Yesterday the farmers in the North Osetian ASSR completed their corn sowing work. All of the work was carried out during the best periods and in a high quality manner. This was the result of use being made of the flow line-cyclical method of work, combining technological operations and creating consolidated brigades on all of the farms. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 15 May 85 p 1] 7026

COMBATTING COLORADO BEETLE--Moscow SELSKAYA ZHIZN in Russian 22 June 1985 carries on page 2, 1,500 words of "expert advice: by I. Shestopalov, chief of the USSR Ministry of Agriculture State Inspectorate for Plant Quarantine Administration, and A. Sikura, deputy director of the USSR Ministry of Agriculture All-Union Scientific Research Technological Institute for Plant Quarantine and Protection, entitled "Combatting the Colorado Beetle." The article lists the areas or pockets where the Colorado beetle is established in the USSR, indicating whether the natural conditions are "favorable, relatively favorable or unfavorable" from the viewpoint of reproduction. The experts consider both chemical and biological methods of eradication, giving detailed instructions for the treatment of crops depending on the level of infestation. There is no mention of any recent outbreak.
[Editorial Report]

THOROUGH TENDING OF CROPS--Odessa, 22 May--Although the last sowing machines have already left the corn fields, the machine operators nevertheless remain on the plantations. Upon completing the sowing work, they immediately commenced their pre-seedling and post-seedling harrowing. At the Kolkhoz imeni Kirov in Belyayevskiy Rayon, the crops are being tended in a thorough manner by the team headed by A. Kostetskiy. Fine work is also being performed at the kolkhozes imeni Dzerzhinskiy, imeni Frunze and on other farms in Ovidiopol'skiy Rayon. [by A. Soldatskiy] [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 23 May 85 p 1] 7026

NEW BREEDING INNOVATIONS--The Ukrainian scientists have prepared an effective replacement for obsolete hybrids. This spring, six new plant breeding developments will make an appearance out on the irrigated plantations. They are characterized by high yields -- more than 100 quintals of grain per hectare, resistance to diseases and fine suitability for the requirements of the industrial technology. [Text] [Kishinev SOVETSKAYA MOLDAVIYA in Russian 7 Apr 85 p 1] 7026

SOWING COMPLETED--The Ukrainian farmers, who completed their sowing work yesterday, have established a reliable foundation for their corn harvest. Of the grain forage crops, corn occupies the largest area -- almost 2 million hectares. [Text] [Moscow PRAVDA in Russian 18 May 85 p 1] 7026

INDUSTRIAL TECHNOLOGY--Donetsk--The industrial cultivation technology will ensure stable corn yields in the Donetsk Steppe region. This year, for the very first time, it is being introduced into operations in the oblast on an area of 150,000 hectares. The cultivation of corn will be carried out by 400 cost accounting detachments and teams. [Text] [Moscow TRUD in Russian 27 Apr 85 p 1] 7026

SPRING FIELD WORK--Ternopol, 25 May--The mechanized detachments and teams in Zaleshchitskiy Rayon, which operate on a collective contract basis, have organized well their tending of the crops. Post-seedling harrowing has generally been carried out on all of the farms and inter-row cultivation is now commencing. Simultaneously with the loosening of the inter-row spacings, the plants are being given a top dressing of organic and mineral fertilizer. A fine example is being set by the corn growers at the Kolkhoz imeni Bogdan Khmel'nitskiy. This year the rayon's farms intend to obtain 60 quintals of grain and 400 quintals of corn fodder from each of 7,000 hectares. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 26 May 85 p 1] 7026

WATER-REPELLENT SEED CORN--Grodno, 4 [Jun]--The centralized rendering of seed corn water-repellent has helped oblast farms to considerably accelerate the planting of the corn, thereby increasing the yield. The Shchuchinskiy Rayon Sel'khozkhimiya Association has fully coped with this task for the 3rd year in a row. Rationalizers have installed a line consisting of concrete mixers, bucket chains and tanks at the Rozhanka Railway Station and produced an excellent shop. It has been processing 200 tons of seed per 24-hour period. The shop has now covered more than 2,000 tons of seed corn with the protective film. [By SEL'SKAYA ZHIZN' correspondent V. Legan'kov] [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 5 Jun 85 p 1] 11499

INCREASED CORN PRODUCTION--Belgorod, 26 [Feb]--Since last year oblast livestock raisers have switched to a low-concentrate type of livestock feed with minimal use of grain. The nutritional value of the ration has been increased considerably by using ground-up ears of ripe corn. This year it is planned to increase the area planted to corn for grain more than 2.5-fold to 120,000 hectares. The grain growers have been assigned the task of obtaining at least 50 quintals of grain per hectare and preparing 600,000 tons of high-energy concentrated feed. [By SEL'SKAYA ZHIZN' correspondent A. Trubnikov] [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 27 Feb 85 p 1] 11499

INDUSTRIAL CORN CULTIVATION--Belgorod--Crop growers of Belgorod Oblast are using the industrial technology for cultivating corn. They finished planting the crop on 270,000 hectares yesterday. Non-contract teams took on the entire job. They have now considerably expanded the crop area. They are making extensive use of the experience of outstanding collectives which obtained more than 80 quintals of grain per hectare in the Central Chernozem Zone. [Text] [SOVETSKAYA ROSSIYA in Russian 16 May 85 p 1] 11499

WATER-REPELLENT SEED PLANTED--Smolensk (TASS)--Oblast machine operators are planting corn on areas additional to the plan. The scientists have helped the crop growers to work out the technology for obtaining good yields from this crop by acquainting them with a progressive method of preparing the seed--rendering it water-repellent. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 31 May 85 p 1] 11499

CORN PRODUCTION STRESSED--Minsk--Crop growers in Gomel and Grodno oblasts have completed the planting of corn. The area planted to it has been increased to 385,000 hectares. Fertile soil, primarily on southern slopes, was designated for this crop. Seed from the best varieties, including early-ripening varieties, have been covered with a film which protects it against frost. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 25 May 85 p 1] 11499

LIVESTOCK FEED PROCUREMENT

USSR, UKRAINIAN FEED PROCUREMENT FIGURES

Hay, Haylage, Grassmeal

Moscow Television Service in Russian 1700 GMT 10 Jul 85

[From the Vremya newscast; announcer-read report]

[Text] As the USSR CSA reports, by 8 July 22.4 million tons of hay had been laid in the country, 29 percent. Almost 32 million tons of haylage had been procured--55 percent. A total of 2.3 million tons of grassmeal had been procured and 3.2 million tons of silage.

Ukrainian Oblast Data

Moscow SELSKAYA ZHIZN in Russian 5 Jul 85 p 1

[Animal technician M. Glinka "Agricultural Review": "The Ukraine's Hay Stores"]

[Excerpt] In the Ukraine as a whole the picture of feed procurement is rather mixed. This was the situation on 1 July (as a percentage of the plan).

<u>Oblast</u>	<u>First cut</u>	Procured	
		<u>Hay</u>	<u>Haylage</u>
Vinnitsa	80	96	75
Volyn	81	93	65
Voroshilovgrad	87	66	39
Dnepropetrovsk	96	23	41
Donetsk	81	38	74
Zhitomir	77	78	80
Transcarpathian	42	30	101
Zaporozhye	86	30	54
Ivano-Frankovsk	63	48	67
Kiev	76	55	83
Kirovograd	93	75	38
Crimean	76	47	94
Lvov	72	42	90

<u>Oblast</u>	<u>First cut</u>	Procured	
		<u>Hay</u>	<u>Haylage</u>
Nikolayev	71	36	61
Odessa	75	52	41
Poltava	65	29	59
Rovno	81	70	85
Sumy	70	47	85
Ternopol	72	48	76
Kharkov	88	37	34
Kherson	77	33	45
Khmelnitskiy	69	47	77
Cherkassy	80	65	61
Chernovitsy	66	46	91
Chernigov	75	74	66
Ukraine as a whole	77	51	66

CSO: 1824/472

AGRO-ECONOMICS AND ORGANIZATION

ESTONIAN PARTY OFFICIAL ASSESSES AGRICULTURAL DEVELOPMENT

Tallinn KOMMUNIST ESTONII in Russian No 4, Apr 85 pp 17-25

[Article by A.-B. Upsi, secretary of the Central Committee of the Estonian CP:
"Securing and Multiplying What Has Been Achieved"]

[Text] A responsible period--the last season for field work during the 11th Five-Year Plan--is coming for the collectives of the Estonian SSR Agro-Industrial Association. Preparations for it are being carried out in an organized manner. In general, stall upkeep of cattle has been successfully completed despite the severe winter. In order to secure and multiply what has been achieved, in coming months agricultural workers must lay a firm foundation for successfully completing the current five-year plan and for increasing agricultural production during the new, 12th Five-Year Plan. After all, the results of work during subsequent years will be greatly affected by the size of the feed reserve, the size of the herd and its productivity at the end of this year. All of this must be taken into account by party organizations, an important goal of which is to orient labor collectives toward coming new matters.

Our country is at the early stage of developed socialism. In every sphere of the economy and in any sphere of life the role and responsibility of party organizations have increased and will continue to increase with regard to dealing with the tasks assigned to them. The current year has been rich in events which multiply the labor enthusiasm of the Soviet people. Workers of our republic's agro-industrial complex greeted elections to the Supreme Soviet and to local soviets of people's deputies of the Estonian SSR with worthy successes; soon they will summarize the results of the implementation of socialist obligations adopted in honor of the 40th anniversary of victory in the Great Fatherland War.

The most important coming event is the 27th CPSU Congress. Today all efforts of collectives within the agro-industrial complex are directed at marking this historic moment in the life of Soviet society with new labor victories.

The party's plans will be reflected more fully in the decisions of the congress and in the new version of the CPSU Program. However, the course toward continued economic intensification in our entire country and toward an improvement in the economic mechanism has already been determined in the general plan. At the October 1984 Plenum of the CPSU Central Committee, which

summarized the results of implementing the Food Program and which passed a long-term program of reclamation and of increasing the effectiveness of using reclaimed lands, the following was noted: "First and foremost we must increase the productivity of livestock by improving the quality of the herd and by decisively strengthening the feed base. Achieving greater production without increasing the size of the herd and with efficient expenditures of feed, labor and resources--these must be the basic directions for developing livestock raising.

"There is no doubt that the only correct way to solve these key problems involves the overall intensification of agricultural production and its transition to an industrial track."

During the current five-year plan in our republic we have seen two main, closely related trends in the implementation of the party's agricultural policy. The first trend reflected the course toward intensification of production, signifying increased productivity of field crops, improved use of feeds and increased productivity of livestock raising. The second trend involved increasing livestock production output primarily on the basis of local feeds. In order to increase the reserve of local feeds we must first of all improve the productivity of farming, and here the largest reserves are hidden in improving the meadow-pasture economy. The natural and economic conditions found in our republic are also better met by production development as regards grass feeds.

First and foremost, grass feeds enable us to increase the production of milk and beef. Of course, hogbreeding must also be developed, but the greatest possibilities probably exist for increasing gross beef production.

In recent years Estonian agricultural workers have had great success in increasing the production of dairy farms. In kolkhozes and sovkhozes in 1983 average productivity per cow was 3,701 kilograms, and in 1984--3,855 kilograms. In all categories of enterprises (i.e., including private plots) last year milk yield per cow exceeded 3,900 kilograms, which is a record indicator in Estonia's history of dairy livestock raising. However, there is no need to rest on our laurels. After all, this year's socialist obligations for workers of the agro-industrial complex foresee increasing milk yield in all categories of enterprises to an average of 4,000 kilograms and selling the state 1.22 million tons. This is an intensive but fully realizable task. Already last year milk sales to the state comprised 1.214 million tons, and in three rayons--Rakvereskiy, Paydeskiy and Pyarnuskiy--average annual productivity of the dairy herd exceeded 4,000 kilograms in kolkhozes and sovkhozes. The livestock farmers of Kharyuskiy Rayon closely approached this goal.

We should especially note the fruitful work of village workers in Pyarnuskiy Rayon. Let me remind you that as long ago as 1975, 3,266 kilograms of milk were produced here per cow--this was over 200 kilograms less than the republic average. Under the leadership of the party rayon committee rayon workers began serious work to improve dairy farming and the results are evident. By the end of the 10th Five-Year Plan the rayon's livestock farmers had achieved

average republic indicators in their work and now they are successfully competing with leading enterprises.

The share of beef has increased in gross meat production. Last year enterprises sold 117,500 tons of cattle (live weight), which is 11 percent more than in 1983. At the same time there was a 6-percent increase in pork production. Farmers of Khaapsaluskiy, Khar'yuskiy and Khiyumaaskiy rayon are increasing beef production more rapidly than the republic average.

During the last 2 years the Estonian SSR has fulfilled its goals related to the sale of the main livestock products to the state. Last year in all categories of enterprises the plan for the procurement of meat and milk was overfulfilled by 5 percent, and of eggs--by 4 percent. Weight gain of feeder cattle increased--in kolkhozes and sovkhozes adult cattle and their young gained 540 grams per day, which is 20 grams more than last year.

However, in analyzing the fulfillment of plans for the entire five-year plan we must state that according to the results for 4 years, we are indebted as regards the sale of meat and milk. This indebtedness is based on unfavorable weather conditions during the first 2 years of the five-year plan and also partially on not totally realistic plans. The 4-year plan for the sale of milk has been fulfilled by 98 percent (an undersupply of almost 80,000 tons) and of meat--by 96 percent (a debt of 41,600 tons). Here during the last 2 years the goals for meat and milk procurement were somewhat lower than initially indicated in the five-year plan.

Socialist obligations for the current year foresee a noticeable decrease in tolerated lags and basically an achievement of production levels indicated in the five-year plan for 1985. In milk production the republic met this goal already last year, but considerable work must still be done to increase meat production, especially since the present socialist obligation of selling the state 286,000 tons of livestock and poultry is still 4,000 tons less than the amount planned for this year by the initial five-year plan. Thus the workers of the republic's agro-industrial complex must seek out and utilize reserves for increasing meat production with special persistence.

First of all, summer upkeep of cattle should be organized in a model fashion. In recent years a considerable amount has been done to improve the pasturing of the herd and to correctly organize and use the green conveyor. During the coming summer even more attention must be given to this because there are still sufficient numbers of enterprises which have not been able to correctly organize the pasturing of cattle. These questions, as well as problems involving the wintering of cattle, must remain at the center of daily attention of party organizations.

The second large reserve involves increasing the milk yield of cows in enterprises with a relatively low level of production. Last year there was not a single kolkhoz or sovkhоз in the republic with an average productivity lower than 3,000 kilograms per cow. To achieve this goal extensive purposeful work was carried out and it must now be continued in enterprises where milk yield per cow does not reach 3,500 kilograms. After all, last year 723 of our milkmaids produced an average of 5,000 kilograms of milk per cow in her group,

and in 110 enterprises (37 percent of the total number of kolkhozes and sovkhozes) over 4,000 kilograms of milk were produced per cow.

At the All-Union Economic Conference on Problems of the Agro-Industrial Complex, the introduction of cost accounting and collective contracts was brought up as an important reserve for increasing the growth of agricultural production output. Although experience confirms the great effectiveness of collective contracts, in our republic's agriculture they are still utilized quite modestly. According to data from ESSR Agroprom [Agricultural Industry Association], for example, fewer than 1,000 persons are working according to this method in livestock raising, on farms and in brigades and links. Here the fault lies with both republic and rayon agro-industrial associations, which are not carrying out the corresponding educational work and which do not provide enterprises with the necessary directions. Unfortunately, it must be admitted that party organizations also are not effecting the dissemination of this valuable management method with sufficient energy.

The best results in the use of collective contracts have been achieved by Sovkhoz imeni A. Sommerling and by Saku Research-Demonstration Sovkhoz of Khar'yuskiy Rayon as well as by Adavere and Luun'ya sovkhozes and several other enterprises. It is essential to rapidly generalize and widely propagandize progressive experience.

Kolkhoz and sovkhoz workers have told the rayons' and republic's administrative organs more than once that there is no need to assign herd sizes to enterprises and that the producers of products should be trusted more. However, this principle requires that all enterprises calculate, precisely and realistically, the size herd they need in order to fulfill plans and socialist obligations dealing with meat and milk production. I emphasize the word "realistically" because often preliminary calculations are later not justified in practice. After all, the productivity of cows depends on many factors and not just on feed reserves. Thus it happens that calculations involving increased gross production by means of better feeding of a smaller herd are often unjustified. For example, in Khiyumaaskiy Rayon a decrease in the size of the herd resulted in a decrease in gross production. Each enterprise should maintain the number of animals needed to achieve the necessary growth in gross production and to meet all obligations. The size of the herd can be decreased only if this is accompanied by significant growth in the productivity of animals.

In addition to the development of our basic supplier of livestock products--the public sector--we must not decrease our attention to the production of meat and milk on the private plots of workers. Last year production output, especially of meat, increased in such enterprises. Individual owners of cattle supplied over 17 percent of the procured milk and almost 15 percent of meat. At the same time, the census conducted at the end of last year showed somewhat of a decrease in the size of the herd of cattle on private plots. Evidently, kolkhozes and sovkhozes are not dealing with this problem with sufficient seriousness. Of course, the upkeep of livestock on private plots should in no way hinder public production, but all possibilities should be utilized to provide more planned help for individual owners of cattle.

In speaking of the production and procurement of livestock products, which are the main criteria for evaluating the activity of the republic's agro-industrial complex, we must always keep in mind that the production of meat, milk and eggs depends first and foremost on the feed base. After all, difficulties in feed procurement and the low quality of feed were the reasons for the non-fulfillment of plans related to meat and milk during the first years of the five-year plan. Further growth in production of livestock products will depend, to a decisive degree, on how much we will be able to improve the productivity of fields and meadows and on how well we will be able to improve the quality of feed and rations of animals.

In recent years farming has achieved a certain amount of success. Let us look at least at last year. Kolkhozes and sovkhozes produced an average of 30 quintals of grain per hectare, 183 quintals of potatoes, 47.9 quintals of hay from perennial grasses, 408 quintals of feed root crops and 201 quintals of vegetables per hectare on open ground. In comparison to the year before last, the productivity of all crops has increased. The republic has fulfilled state plans on the procurement of grain, potatoes and vegetables. Especially satisfying was the considerably increased yield of potatoes, which in the first years of the five-year plan was rather sparse (as a result, according to 4-year totals, a 7-percent or 72,400 ton debt remains in the sale of potatoes to the state). The republic is fulfilling its plans for the sale of grain and vegetables. However, the 4-year goal for the procurement of fruit, berries and flax fiber was fulfilled by only 68 and 63 percent, which to a large degree is due to the poor organization of procurement.

In enterprises, a large part of farm products is used for livestock feed. With regard to feed procurement the most successful year was 1983, when enterprises stockpiled a total of over 12.8 million quintals of feed units (without potatoes), or 1,313 feed units per head of cattle. Last year, despite the good grain harvest they were able to procure only about 12.3 million quintals of feed units, or 42 feed units fewer per head of cattle than in 1983. The wintering of cattle was especially complicated by the fact that only 64 percent of the volume of hay procured the year before last was procured this year.

On the threshold of the new season in farming I would like to especially direct the attention of directors, specialists and party organizations of enterprises at the unsatisfactory fulfillment of goals related to expanding the area in protein-rich crops. The only positive factor here was the fact that the proportion of clover and alfalfa within perennial-grass crop stands has increased to 41 percent. But we cannot be satisfied with this because already in coming years this percentage must be increased to 50 percent. Consequently, we must purposefully become involved in expanding the area in protein-rich crops.

The cultivation of peas has been organized poorly. Last year the area in this valuable crop even decreased. Socialist obligations for this year foresee the sowing of peas at least on 40,000 hectares. In the future it is planned to further increase the area in this crop. This will be possible only if a firm foundation is laid for seed farming in peas.

The area in root crops and feed cabbage has also decreased. It is true that there was a simultaneous increase in productivity and to certain degree in gross yield of these crops. The plan for the procurement of feed root crops was fulfilled by 104 percent, thanks primarily to its significant overfulfillment by Tartuskiy, Valgaskiy, Vyruskiy and Yygevaskiy rayons. Seven rayons did not fulfill their plans for the procurement of root crops. In Paydeyskiy Rayon the underfulfillment comprised one-fifth of the total, and in Khiyumaaskiy and Khar'yuskiy rayons--16 and 14 percent respectively.

Cultivation of rape is being expanded more slowly than planned. The sowing area in winter rape increased from 4,300 to 6,800 hectares and the yield of green mass almost doubled, but at the same time there was a curtailment of the area in spring rape. The reason for this, first and foremost, is the slow solution to problems related to treatment of rape seed.

In the production of milk and meat, as in increasing gross yield of grain, potatoes and other crops, the main reserve is to improve enterprises with a relatively low productivity as compared to average levels. Last year almost 50 enterprises--15 percent of the total--produced fewer than 25 quintals of grain per hectare. Similar situations exist with other crops as well.

A great deal of valuable feed is lost as a result of the neglect of the optimal harvest schedule, of poor work quality and of careless storage of the harvest. This means that the mobilization of collectives involved in farming for achieving irreproachable quality and for adhering to optimal schedules to carry out seasonal work should now be the daily concern of party organizations. It is also essential to improve the organization of socialist competition and to concern ourselves with the universal use of an effective system of stimulation.

As we say, the years are not brothers and weather conditions unavoidably affect crop productivity. However, it is a fact that by far not all enterprises have introduced a scientifically-based system of farming that would achieve constant growth in soil fertility and large, stable harvests. In many sovkhozes and kolkhozes revitalized lands are utilized poorly. In almost one-fifth of the republic's enterprises fewer than 2,500 feed units per hectare are produced. Meanwhile this level can be surpassed everywhere with a judicious and business-like use of land. As regards this question, the first secretary of the Estonian CP Central Committee, K. Vayno, noted: "Certainly it is sensible to put special controls over these enterprises and to work persistently with them, as we did in our time with enterprises where the average milk yield per cow was below 3,000 kilograms."

If we are not able to meet our goals this year, they should be fulfilled unconditionally in the near future.

In the republic another complex of measures involving farming will be implemented in the near future. This has to do with the introduction of a system of intensive cultivation of grain crops which must achieve stable per-hectare yields of 40-60 quintals in enterprises utilizing the system. Without this it is impossible to achieve a planned average productivity of grains equalling 35-36 quintals per hectare. This year we must lay a foundation for

introducing a system of intensive grain farming; next year the system must be used on 10-12 percent of the area in grains, as foreseen in a special plan of measures by ESSR Agroprom and approved by the Central Committee of the Estonian CP. Basically, we have the required seed and resources. Already last year almost half of the area was sown in intensive varieties, but in many cases the planned productivity of these varieties was not achieved.

We must also touch on the question of the utilization of straw. As we know, it is a valuable feed. For the last wintering period only 64 percent of the planned volume of straw was stockpiled. On the fields we can see stacks of straw, some of which will not be removed. We can draw only one conclusion--there is a careless attitude toward valuable organic materials and as a result there is an underproduction of a certain amount of milk and meat.

On the other hand, the careless harvesting of straw is accompanied by a drop in the quality of soil cultivation and thus in the productivity of crops. The land under stacks of straw is not utilized and often becomes a source for the spread of weeds. At the same time, in many enterprises fields do not receive the planned volume of organic fertilizers, as a result of which the humus content of the soil decreases.

We must make sure that every enterprise develops precise plans relating to the use of straw similar to those developed for conveyors for grass-feed production. For this it is essential to foresee the use of straw in the form of feed, bedding, a component of compost, for plowing under and for other purposes. Party organizations must also increase attention to questions relating to increasing the use of straw and they must require that directors and specialists of enterprises organize this work in a planned manner.

In the activities of our republic's agro-industrial complex a certain degree of success has been achieved in recent years, but a great deal still remains to be done in achieving a qualitatively-new level of agricultural administration. At the October 1984 Plenum of the CPSU Central Committee this goal was formulated in the following manner: "The problems set forth by life on the path toward transforming agriculture into a highly developed sector of the national economy requires new and more effective solutions. We are speaking not of changing the accent in our directives but of totally innovative and creative approaches."

In dealing with this task it is extremely important to establish specific, universally-understandable goals and purposes which are precisely coordinated with the level that has already been achieved. It would be unjust to bring out unrealistic goals although they may be very attractive. Of course we cannot fall into the other extreme of underestimating the possibilities and advantages of the socialist economy.

Precisely now we are obliged to adhere firmly to the Leninist principle according to which we must not forget what must be done today and tomorrow while we put forth our long-term goals. All party organizations must follow this principle in their work. Without loosing sight of everything that is related to the fulfillment of goals for this year and the five-year plan, we

must seriously think about the implementation of plans for the next five-year plan and for the more distant future.

During the preparatory period for the regular party congress it is important to attentively study all that is positive and valuable in the life of party organizations and at the same time to single out errors and analyze the reasons for them. Our republic was among the first to create rayon agro-industrial associations . On a republic level ESSR Agroprom is the first of its kind. This attests to the intensive search for ways to improve management within the entire agro-industrial complex. But this places great responsibilities on us because our experience is being studied and others are measuring themselves against us.

In analyzing the results of the first years of operation of ESSR Agroprom we may note a decrease in and sometimes an elimination of barriers between departments within the complex, as well as more purposeful work with cadres. At the same time we must admit that not everything is going as planned. Not all directors were able to reorient themselves rapidly to new circumstances; they often seek out reasons for unsatisfactory work instead of ways to organize it better and to eliminate difficulties. Our present goal is to constantly improve the activity of the existing agro-industrial complex with an orientation toward a comprehensive solution to problems that may arise.

On the path toward this goal party raykoms will be called upon to play a much more active role. In the matter of improving party work, in the RAPO [Rayon Agro-Industrial Association] responsible tasks are assigned to agricultural divisions of raykoms, which must become centers for the generalization and dissemination of corresponding progressive experience.

Policies, including economic policies, are implemented by people. In the light of this Leninist directive, the CPSU proceeds from the principle that becoming involved in the economy means first and foremost becoming involved with people who manage the economy.

Work with cadres must be at the center of attention of party organizations at all levels, beginning with the enterprise and ending with the ministry and the department. Above all we must create conditions which will allow people to utilize their capabilities and which will contribute to the confirmation of a creative attitude toward work. After all, the main reserve for the development of our economy consists of a growth in the consciousness and creative activeness of workers. This idea was emphasized with new force at the June 1983 Plenum of the CPSU Central Committee, which noted that great creative forces lie hidden first and foremost in the consciousness and ideological conviction of the masses.

Recently many enterprises have become the object of criticism because the number of all types of specialists directing and controlling the actual executors of work in them is growing while there is a shortage of livestock farmers, machine operators and building, repair and other workers. Directors and party organizations of enterprises should find out the reasons for this type of situation and improve labor organization so that people will not have to be assigned everything and so that there will be no need to control them

at every step. It would be much more expedient to skilfully organize socialist competition and to utilize a system of stimulation that will guarantee the activeness of workers. This will enable us to make the work of management cadres more creative as well.

A well thought-out organization of labor which stimulates the initiative and enterprise of workers oftentimes contributes to decreasing the cadres' shortage. On the other hand, the coordinated organization of production and skilful management serve as a type of advertisement of agricultural labor, prompting young people to select agricultural professions. This confirms the experience of our best enterprises, where there is practically no shortage of manpower and which act as the forge shops of management cadres for other enterprises, for their own rayon and for the entire republic. In places where workers do not know how to correctly organize production there is an acute shortage of machine operators, livestock farmers and specialists too.

Party organizations must carry out painstaking educational work among field and farm workers with the goal of selecting people from among them for the purpose of education and of preparing to replace management cadres. Practice shows that directors who come from among the ranks of regular kolkhoz farmers and sovkhoz workers usually deal successfully with their goals because they know how to evaluate the situation from the position of direct executors of work as well. Thus, for example, the current director of Keeni Sovkhoz, Eduard Aamer, began his work career as a machine operator, studied at the party school and graduated by correspondence from the economics department of the Estonian Agricultural Academy. Having accepted the post of director of a then lagging sovkhoz, he was able to fill the positions of specialists with sensible workers and together with them to bring order to the enterprise. This laid the foundation for rapid and stable improvements in production indicators.

The radical improvement of labor organization in lagging enterprises makes the highest demands of the first directors and specialists. Much must be altered in the customary style of work and new management principles must be assimilated. Here, important tasks are assigned to party organizations, which are called upon to help managers in word and in deed and if necessary--to make strict demands of these managers. After all, the majority of directors and head specialists of enterprises are communists.

The requirement to improve management and to carry it out on a qualitatively-new level refers first and foremost to average and lagging enterprises and their party organizations. But even in leading enterprises, of course, production and management must constantly be improved and made to correspond to contemporary requirements. We can boldly confirm that this is indeed the case. The goals toward which most enterprises must strive have already been fulfilled by the best sovkhozes and kolkhozes.

What specifically do we mean by improving management?

Let us look, for example, at a scientifically-based farming system, which must be introduced everywhere, as we stated above. We can say that in many enterprises this system is fully operational; here workers are able to adhere

to crop rotations and to maintain a positive humus balance even during years when the requirement to expand the sowing area in grains is not quite justified. If we compare the activities of farming managers in Edazi Kolkhoz of Pyarnuskiy Rayon, Tartu Research-Demonstration Sovkhoz and Vambola Kolkhoz of Vil'yandiskiy Rayon on the one hand and in lagging enterprises on the other, we will note that the latter usually work with no less intensity. The difference lies only in the content of work. Whereas Arnol'd Erm, Kheyno Khyarm and Leontine Kallas are real managers of their production branches who develop measures with feeling in order to improve farming and who organize and direct the implementation of indicated plans, many of their colleagues hardly find time for work and are constantly operating on an emergency basis, making daily decisions only about ongoing matters that cannot be delayed. Meanwhile, there is no clear division of function between specialists of the middle link, their stimulation based on work results has not been introduced, the activities of links that service agriculture have not been coordinated and often the entire structure of management of the enterprise leaves something to be desired.

Here is another example. In recent years much has been said about the successes of livestock farmers in Estoniya Kolkhoz of Paydeskiy Rayon. Last year the average productivity of the dairy herd here reached 5,545 kilograms. In this enterprise livestock raising is based on a single integral system which is oriented toward the end result. For example, in livestock raising the goals which have been put forth are not simply large yields or improvements in some other indicator, but a high level of profitability and maximal profits for the entire branch of production. The kolkhoz's senior zootechnologist, Peeter Kibe, is very familiar with the kolkhoz herd and manages selection-breeding work in a planned manner. We must admit that at present only a few enterprises here know how to organize all of livestock raising in a planned manner and to manage it on the basis of an integrated system.

In addition to specialists, we cannot forget about field and farm workers, on whom, in the final analysis, the fulfillment of all our plans and ideas depends. According to last year's results, the following workers deserve the highest labor recognition: milkmaid Lidiya Vakhing of Vyandra Research Sovkhoz, her colleagues Khil'ya Kyagu and Ayno Lips of Estoniya Kolkhoz, and especially Asta Romanovski, recipient of the USSR State Prize, of Vykhma Kolkhoz. Among the best calf attendants are Ayno Varul and Viya Vyakram of Estoniya Kolkhoz and Khelene and Ral'f Kaazik of Aravete Kolkhoz, Paydeskiy Rayon. High-class masters also include livestock farmers Sir'ye Lott', Nina Ziskun and Ayvara Luhta of Estoniya Kolkhoz - the feeder cattle in their care gained over 1 kilogram of weight per day.

Last year's socialist competition in hogbreeding was headed by the following workers who took care of sows: Mariya Bernatskaya of the experimental hogbreeding combine of the Research-Demonstration Sovkhoz-Technical School imeni Yu. Gagarin, Linda Talton of Kuusalu Kolkhoz of Khar'yuskiy Rayon and Valentina Kirpu of Kokhila Sovkhoz in Raplaskiy Rayon. The largest weight gains in feeder hogs were achieved by Antonina Choba of the aforementioned experimental combine, Tamara Kaazik of Tartu Research-Demonstration Sovkhoz and Khans Veynberg of Kokhila Sovkhoz.

In leading positions in socialist competition among machine operators were combine operators Aleksey Linnasmyagi of Kolkhoz imeni V. Kingiseppa of Tartuskiy Rayon and Leo Myullerson of Tartu Research-Demonstration Sovkhoz. Excelling in feed procurement were Kheyno Vilgats of Likhula Sovkhoz in Khaapsaluskiy Rayon, Kalev Khelsteyn of Pyarivere Sovkhoz in Pyarnuskiy Rayon and Yaan Land of Kekhtna Research-Demonstration Sovkhoz-Technical School in Raplaskiy Rayon.

We have many distinguished workers too numerous to mention. Naturally, the best results are achieved first and foremost by those enterprises which have organized production and all work irreproachably.

The most intent attention is required, particularly on the part of party organizations, as regards questions of an economical expenditure of energy, fuel-lubricants, feeds and so forth. In carrying out any operation we must think about how to achieve high quality with fewest expenditures. In order to economize on electrical energy, fuel and lubricants it is essential to carry out a daily battle against negligence and mismanagement and to optimize shipments, improve technical servicing of machines and mechanisms and organize the production of grass meal, granules and so forth in a more efficient manner. In the interest of the economic use of energy resources it is essential to strengthen attention to storing fuel energy at times other than during peak electrical-use periods. A significant expansion in the area in pea crops, which increase soil fertility, can also be included among the possibilities for economizing on material resources.

This year's socialist obligations for workers of the Estonian SSR include the production of an additional 5,500 tons of milk and 2,000 tons of meat by means of the effective and economical use of existing feeds. Enterprises have many reserves for fulfilling and overfulfilling this goal--these reserves just have to be found and utilized.

The implementation of the Food Program requires the coordinated functioning of all links within the agro-industrial complex--from agricultural production output in kolkhozes and sovkhozes to delivery of these products to the consumer. At the present time, the weakest links are the processing of livestock and poultry, in part the production of concentrated feeds and the cultivation of quality food potatoes.

In our republic a great deal has been done to improve the work of meat combines, yet some enterprises do not have the possibilities to deliver slaughter-weight animals on schedule and are thus forced to expend a considerable quantity of feed for their upkeep. To avoid such losses of feeds we must act in two directions--first to improve cooperation between meat producers and processors and second to strengthen the material base of meat combines.

In order to improve cooperation between enterprises and meat combines it is necessary to decrease the seasonal nature of meat production. In this case meat processors would be able to work in a more well-paced manner, and this is an important prerequisite for improving the organization of all their

operations. Of course, it is not possible to fully eliminate the seasonal nature of meat production, especially beef, but it is completely possible to mitigate the effect of seasonality. More attention should be given to developing, coordinating and then unconditionally adhering to schedules for livestock procurement. At present, schedules are poorly thought-out and are not being completely fulfilled. Mutual accusations are useless here; everyone should work jointly to find solutions that are agreeable to both parties.

As for the production of mixed feed, its quality is cause for criticism. Here the main solution appears to be the renovation of industrial enterprises and the strengthening of the material base of production. At the same time, we must mention that even under existing conditions it is possible to organize the work of grain combines and mixed-feed plants better.

As regards the cultivation and procurement of food potatoes, it must be said that those who have been assigned this task, especially Agroprom and ESSR Minplodoovoshch [Ministry of the Fruit and Vegetable Industry], have not begun to seriously work on this goal. Our enterprises know how to raise good feed potatoes. We must simply and without delay introduce a system which stimulates the production of the "second grain" to a sufficient degree and which achieves its procurement, storage and delivery to stores in quality condition.

In order to implement the goals put forth by the Food Program we need a more flexible conceptual stock in terms of the management of the entire agro-industrial complex. That which appears to be useful from the point of view of the farm, enterprise or ministry can be completely inexpedient from the point of view of the complex as a whole. Without a vision of scale and of the entire system we should not expect good end results.

Recently, the idea that we must work better in order to live better has been emphasized often. Hardly anyone would contradict this simple truth, but it is not interpreted or implemented all the time or everywhere. The embodiment of this principle signifies first and foremost the increased demandingness toward every worker. More rewards and other benefits should be provided for better work. Those who work with their sleeves rolled down or who do not want to participate in socially-useful work at all should not even expect a better life. We cannot allow machine operators to get a solid wage for poorly-cultivated fields, milkmaids--for negligent care of animals, or production managers--for unskilful management.

Everything we do in the course of placing an enterprise on the path toward intensification must be based on objective laws for the development of the socialist economy. Today we have entered a stage of development in our society in which noticeable results cannot be achieved only by means of conviction or the assignment of goals without foundation. Knowledge about the laws of management, taking these laws into account properly and utilizing them skilfully--these things are becoming more and more indispensable. An obvious example of this is the introduction within agriculture of a complex of measures in accordance with decisions of the May 1982 Plenum of the CPSU Central Committee which will achieve the rejuvenation of production and an

improvement in economic indicators (during the last 2 years there has not been a single unprofitable kolkhoz or sovkhoz in our republic).

An important factor facilitating intensive production is the established supplement to procurement prices for volumes of agricultural production that surpass average levels for the preceding five-year plan. Moreover, 60 enterprises which still find themselves under more difficult conditions are being paid supplements to procurement prices for a period of 3 years in order to help them reach an economic level that would allow them to do without further outside aid.

Practice has confirmed the expedience of such aid, especially where the reasons for lags were organizational in nature and where directors, specialists and party organizations of enterprises were able to deal properly with the aid that was rendered. However, a portion of enterprises operate under conditions in which there will continue to be a shortage of resources for the constant development of production. For example, this includes the enterprises of the hilly south and of several other regions in Estonia where natural and economic conditions allow us to develop production on an equal level with other enterprises only with special stimulation. ESSR Agroprom should find ways and take decisive steps to render aid to such enterprises.

Existing resources enable us to more effectively reward production development and improved quality of labor and production. For example, we can utilize supplements to procurement prices better from the sale of cattle of the highest nutritional state, utilize the fund of material stimulation more effectively, and so forth. Deserving of the most intent attention are the proposals made by workers concerning the growth of production effectiveness and the improvement in production organization.

The vanguard role of communists is being strengthened in labor collectives. But it can and must become even more decisive. Every communist is obliged to serve as an example of the creative attitude toward work, of discipline, of principle and of irreconcilability to any types of violations or shortcomings.

In addition to the development and improvement of management of the agro-industrial complex, the activities and work methods of party raykoms and party organizations are being developed and improved. Coordination of party work within production zones has been justified in practice. Zonal councils of secretaries of party organizations help to generalize and disseminate progressive experience, to activate cultural work and to organize increased training for workers and education for the party aktiv. Quite naturally, the most weighty experience in this matter has been accumulated in Vil'yandiskiy and Pyarnuskiy rayons, where the RAPO has been in operation for a long period of time now.

It would not be expedient for all regions to adapt this experience. For example, in Vyruskiy Rayon production zones have not been created, but the search for new forms of party work is being carried on there as well; a council of secretaries of party organizations within RAPO enterprises and institutions was created on the initiative of the party raykom for the purpose of discussing urgent questions related to RAPO activities, of generalizing the

experience of leaders, and of cooperating in the preparation of plenums and conferences of the party raykom buro.

These by no means uniquely new forms of work deserve attention because they help to coordinate the activities of party organizations which belong to the rayon agro-industrial complex. Coordination of action among party organizations represents a big step forward in achieving better coordination of the operations of all RAPO farms, enterprises and institutions.

While searching for new and more effective forms of party work we cannot forget about that which has already been tested and which has proven itself well in practice. First and foremost we must emphasize the necessity of improving the success-rate of activities carried out by the administration's commission of party control and of strengthening party influence in all labor collectives down to the collectives of farms and brigades. The creation of temporary party groups for seasonal work and the dispatch of party organizers to farms and other local collectives is totally justified. We must prepare carefully the people on whom we will depend in this work that cannot bear formalism. The person working on the farm, in the field, in a shop or as a production manager must always be at the center of attention of party work. The results of any beginning depend immutably on the degree to which people have recognized the importance of the established goals and on the skill in mobilizing them to achieve even higher goals.

In conclusion I would like to express my firm conviction that workers of ESSR Agroprom will do everything they can to mark the 27th CPSU Congress with new labor victories, to achieve swift development of the branch during the next five-year plan and to accelerate the implementation of the Food Program.

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AGRO-ECONOMICS AND ORGANIZATION

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STRUCTURE OF KUBAN AGROINDUSTRIAL COMBINE DETAILED

Moscow EKONOMIKA SELSKOGO KHOZYAYSTVA in Russian No 4, Apr 85 pp 44-50

[Article by G. Kulik, main administration chief, RSFSR Ministry of Agriculture, and M. Lomach, general director, Kuban Agroindustrial Combine: "The Kuban Agroindustrial Combine. (An Economic Experiment)"]

[Text] Implementation of the party's course toward further intensification of economic sectors, a course which is dictated by the whole development of the country's economy and to which there is no alternative, requires restructuring of the forms and methods of management. The main goal of this work is to create an economic mechanism which is most fully in accord with the needs of developed socialism.

Large-scale economic experiments in industry are already under way in the country. Now this effort is beginning in the agroindustrial complex as well. There is an increasingly vigorous search for new forms and methods of organization of production designed to ensure the best harmonization of the economic interests of society, the labor collective, and the individual worker. This is the aim of the economic experiment being conducted in Timashevskiy Rayon, Krasnodar Kray, where the Kuban Agroindustrial Combine has been created--the first in the country. It represents a unified production-economic complex, based on modern equipment and technology, which organically combines large-scale agricultural production, procurement, largely waste-free processing, storage, transport, and sales of all crop and livestock products. The production activities of the combine and each enterprise are carried out on the basis of cost-accounting and self-support [samookupayemost']. The combine has under its direct jurisdiction all the necessary services such as supplies, transport, repairs, and so on.

It was no accident that Timashevskiy Rayon was chosen for the experiment. It is located in the center of the kray, the rayon center being 73 kilometers from Krasnodar and 300 kilometers from the resort city of Sochi. The soil and climatic conditions are favorable to the development of agricultural production and the processing industry. The average annual air temperature is 10.4 degrees C; annual precipitation is 550 millimeters, and the frost-free season lasts more than 190 days. The kolkhozes and sovkhozes have 151,000 hectares, including 110,000 of arable land.

Average crop yields on the rayon's farms in the 10th Five-Year Plan were 41 quintals of grain, 39 quintals of corn, 24.3 quintals of sunflower seeds, and 326 quintals of sugar beets per hectare. Milk yields per cow exceeded 3,000 kilograms.

The combine incorporates all 16 kolkhozes and sovkhozes of Timashevskiy Rayon, the Tuapsinskiy Fur Sovkhoz, the Krasnodarskiy Chay Special Farms Association in Sochi, a sugar refinery, the rayon food combine, the Timashevsk City Dairy and the Medvedovskiy Butter and Cheese Plant, the meat combine, the Selkhoztekhnika and Selkhozhimiya rayon production associations, automotive transport enterprises, interfarm project-planning and construction organizations, bakery product enterprises, and a scientific-technological laboratory--a total of 56 enterprises and organizations representing various sectors of the agroindustrial complex. It is also planned to bring in a number of trade and public food service enterprises.

The combine is concerned with three interconnected tasks: first, on the basis of further intensification and in a short time to achieve accelerated growth in the production of agricultural output, improved quality, and expanded assortment; second, through the adoption of advanced technologies of processing, packing and storage of agricultural goods to ensure complete utilization of all materials, reduce losses to a minimum, substantially expand the assortment and improve the quality of foodstuffs, and improve provisions to the resort zone of Krasnodar Kray, especially the city of Sochi; third, to radically enhance the effectiveness of all production so that in the future it will be possible to do away completely with budget financing and operate on a self-supporting basis.

By 1990 plans call for boosting grain crop yields on the combine's farms to 50 quintals per hectare, sugar beet yields to 450, sunflower yields to 28, and corn yields to 60, also increasing cows' annual milk output to 3,800 kilograms and the average daily live weight gain to 950 grams for cattle and 600 grams for hogs, and in this way boost production levels over the current five-year plan by 30 percent for grain, 32 percent for sugar beets, 33 percent for vegetables, 20 percent for fruit, 55 percent for milk, and 25 percent for meat.

A program has been worked out for the remodeling of existing enterprises and the construction of new facilities for the processing of goods, making it possible to dramatically increase the output and expand the assortment of food products, to supply them to customers in small-sized and improved packaging. Thus, for example, the production of sausage products will quadruple and the production of dairy products will rise by a factor of 3.6. Plans call for reorganizing the production of a variety of confectionery items, various types of ice cream, nonalcoholic beverages, juices, high-quality vegetable oil made from the best sunflower seeds, various semifinished products, bakery goods, and a wide variety of other products. Total gross output of the products of agriculture and the processing industry by the end of 1990 should come to between 380 and 400 million rubles, a 1.5-fold increase over the present level. The combine will offer a substantial portion of its output for export.

The Broad Independence of Each, the Combined Efforts of All

The basic principle of organization and administration of the combine's complex and multilevel activities is based on the strict combination of broad independence of each enterprise incorporated in it, and the united efforts and responsibility of all in order to achieve the main end goal--that of boosting production and improving its effectiveness. It is also provided that the kolkhozes, sovkhozes, and other enterprises and organizations will retain the economic independence and rights of a legal entity.

The combine's highest organ of administration is a council which consists of the general director as council chairman, his deputies, managers of all enterprises and organizations making up the combine, and representatives of the labor collectives. The composition of the council is to be approved by the RSFSR Ministry of Agriculture, which exercises direct jurisdiction over the Kuban Agroindustrial Combine.

When necessary, specialists of the combine's administrative apparatus, enterprises and organizations making it up, and also representatives of other enterprises, scientific institutions, and social organizations are invited to take part in the work of the highest administrative organ. The council is to convene at least once per quarter. The council's decisions with regard to matters within its competence are to be made by a simple majority of votes in open balloting, and are to be obligatory on all enterprises and organizations.

The management of day-to-day activities is in the hands of a separate administrative apparatus headed by the general director, who is designated or released by the RSFSR Council of Ministers.

The combine conducts a unified technical policy in order to improve the effectiveness of production of agricultural output and, according to economic feasibility, may fully or partially (with the consent of the appropriate enterprises and organizations) centralize the implementation of particular production-economic and other functions.

During the first stages, for example, material-technical supply, capital construction, the production of combination feeds, cattle fattening, breeding, transport services, sales and marketing, and so on were completely centralized. And it did not require the creation of new subdivisions, for these centralized functions are now provided by the enterprises which make up the combine. For example, material-technical supplies to kolkhozes, sovkhozes, and industrial, trade, processing, construction, and transport organizations are the responsibility of the former rayon department of Goskomselkhoztekhnika. The production of combination feeds for all farms is the job of the interfarm combination feeds plant and the combination feeds enterprise of the production association for the procurement and processing of grain forage crops.

Expansion of Rights in the Sphere of Planning

The broad independence of each subdivision of the combine is backed up by many additional rights that have been conferred. Although it is made up of enterprises and organizations of a variety of sectors, including large construction, transport, project-planning, trade, and marketing organizations, all activities are planned and financed as a unified whole within the "Agriculture" sector. Moreover, there is a substantial reduction in the number of indicators assigned to the combine in economic and social development plans.

In place of numerous targets, for example, the combine is assigned only four indicators: volume of deliveries of goods to all-union and republic stocks, based on plans of its production activities; budget payments and appropriations; general (normative) wage fund; and volume of material-technical resources. All other indicators are drawn up, examined, and approved independently by the combine council. These conditions provide the genuine possibility of ensuring full balance among all plan indicators and of taking account of the capabilities and specific features of each enterprise.

In accordance with established targets the council draws up five-year and yearly plans of economic and social development with respect to all types of activity, independently confirms the targets of the enterprises and organizations, and also examines the indicators of their development plans over the longer term. Moreover, the council's main task is to ensure intercoordination of all sections of the plan and balanced development of sectors of agricultural production, processing, procurement, and trade enterprises and organizations.

Bringing agricultural production, the processing industry, and trade and marketing operations together in a single combine makes it possible to efficiently resolve such vital matters as changing the structure of sown areas and the introduction of new high-yield varieties of crops which are most suitable to the needs of industrial processing.

In accordance with existing regulations, the combine is assigned to deliver fruit, grapes, vegetables, meat, milk, and eggs to all-union and republic stocks. Goods produced in excess of established volumes may be used at the combine's discretion.

Plans for the sale of the remaining types of goods--sugar, sunflower seed oil, confectionery items, bagasse, molasses, groats, oil cakes, and so on--are independently established by the combine, reported to the RSFSR Ministry of Agriculture, and taken into account by RSFSR Gosplan when allocating stocks for food commodities.

No state purchase plans are assigned to kolkhozes and sovkhozes. It is the combine council which assigns to them plans for the sale of grain, sugar beets, sunflower seeds, vegetables, food, livestock, poultry, milk, wool, and other types of agricultural goods.

The combine functions as the procurement agent for agricultural goods. The meat combine, the dairy, the sugar refinery, the bakery products enterprise, and the vegetable processing plant draw up delivery contracts with the kolkhozes and sovkhozes, also purchase contracts with the population for surplus agricultural goods. Plans call for substantially expanding the public's participation in increasing the production of poultry and rabbit meat, pork, raspberries, currants, strawberries, also greens, beans, horseradish, garlic, and so on. The combine plans to provide them aid in acquiring seeds, planting materials, and packing materials.

In order to make full use of the processing enterprises' capacity and bring in additional raw materials, the combine has been given the right to draw up contracts for the purchase of goods in other rayons, oblasts, and republics. It is also stipulated that grain, sugar beets, vegetables, fruit, livestock, poultry, milk, and other agricultural goods purchased elsewhere will be credited to the farms and producers toward fulfillment of the state plan, while processed goods produced from this material will be credited to the combine toward fulfillment of the production and sales plan.

Thus, a radically new model is being tested in the sphere of planning. Its main purpose is to expand enterprises' economic independence and give them incentive to enhance end results, especially with regard to deliveries of goods to all-union and republic stocks. All other goods will be processed locally and sold on the basis of contracts with various customers in the resort zone of Krasnodar Kray, especially the city of Sochi.

Enhancing Production Effectiveness--One of the Combine's Main Tasks

The principle and approaches to economic incentive of production are undergoing changes, and the combine's rights with regard to price-formation are being substantially expanded. Sales of agricultural products to all-union and republic stocks are to be paid for on the basis of existing state prices. All other goods sold through the combine's own trade network (stores, cafes, restaurants), on the market, and to other customers, are to be paid for on the basis of prices established by the combine council or stipulated by agreement between the two sides. In establishing prices, account is taken of the quality of the goods, packaging, and consumer demand. Prices must cover the costs of production, storage, processing, and transport, and also ensure the necessary accumulation for expanded reproduction.

All of this creates a broad scope of activities for the combine's economic service, whose functions include constant study of market requirements, in particular determining the types of goods that are most worthwhile to produce from a particular type of raw material, also work on improving the quality and expanding the assortment of product items.

Considering that not more than 60 to 65 percent of all the combine's output will go to all-union and republic stocks, it will be possible to organize more effective processing of the remainder in order to ensure highly profitable work for each sector of production.

The combine council also sets prices on goods to be sold within the combine as well as tariffs and rates for services rendered. The kolkhozes and sovkhozes will deliver goods to the combine's processing enterprises on the basis of prices and terms now in effect. The combine can purchase goods from the population on the basis of agreed-on prices, a factor which will provide a large stimulus to bring in additional agricultural materials from the personal subsidiary farms of kolkhozniks, workers, and employees.

The combine will retain all funds earned from the sale of goods, minus budget payments, collection procedures for which are to be determined by the USSR Ministry of Finance with the consent of the USSR Ministry of Agriculture.

The combine is being given considerably expanded rights with regard to the creation of centralized economic incentive funds. In contrast to present procedures, the combine independently determines the amount of deductions to the centralized economic incentive funds and establishes regulations concerning their use. Depending on the situation, the following centralized funds may be set up: production development, social-cultural measures and housing construction, material incentive, reserve, and others.

The centralized production development and reserve funds are formed out of deductions from profits (net income) of kolkhozes (with their consent), sovkhozes, and other enterprises and organizations. The social-cultural measures and housing construction fund, and the material incentive fund, are formed in the regular way by combining part of the funds of similar funds of kolkhozes (with their consent), sovkhozes, and other enterprises and organizations. Centralized fund monies that are unutilized in the fiscal year are to be carried over into the following year and are not to be confiscated by the higher-level organization.

Thus, the economic system of management in the combine is simple: all earnings, minus payments to the budget out of profits, remain at the disposal of the enterprises, which also determine their disbursement according to available funds.

The Combine's Financial-Accounting Center

A fundamentally new development in the organization of all economic and financial work is the creation of a financial-accounting center to handle transactions between the enterprises and organizations making up the combine, also with supply, procurement, processing, trade, and other enterprises and organizations as well as USSR Gosbank. Figuratively speaking, an internal production bank is being set up. The combine will have unified payment and other accounts in USSR Gosbank outlets. The combine's enterprises and organizations will close out their accounts in Gosbank and open them in the financial-accounting center. The combine's accounts will receive proceeds and cash from the sale of goods, completed work, services rendered, budget appropriations for the financing of construction of water management facilities, measures to develop new lands, build large livestock complexes, and enterprises for the processing and storage of agricultural goods and packing production, also funds to make up the difference in prices on

tractors, vehicles, agricultural machinery, mineral fertilizers, and the difference in prices involved in the procurement and processing of milk, livestock and poultry, and other goods, if the latter is sold as part of the plan of deliveries to the all-union and republic stocks, as well as short- and long-term Gosbank credits and other funds.

Settlement of kolkhoz and sovkhoz accounts with processing, procurement, construction, supply, and project-planning organizations included in the combine will be of an internal nature and accordingly affect the payment accounts of the kolkhozes, sovkhozes, and other enterprises and organizations listed above, that have been opened in the financial-accounting center. All funds for goods sold outside the combine by the kolkhozes, sovkhozes, and other enterprises will, after being deposited to the payment account of the combine, also be entered to the appropriate accounts in the financial-accounting center.

The creation of the financial-accounting center will make it possible to keep on top of the financial situation literally every day, every hour, and be aware of the economic indicators of all enterprises and organizations. It will make it possible to take prompt measures to enhance the work effectiveness of each farm, monitor the goal-oriented and effective use of allocated funds, keep up to date on payments to the budget, and so on. In addition, centralization of the funds will make it possible to maneuver the farms' surplus resources flexibly and make use of them to resolve tasks relating to the development of the combine as a whole, and to render prompt aid to needy enterprises and organizations as well as lagging farms.

By means of the financial-accounting system, the combine will centralize the making of payments from profits into the budget on the basis of procedures and in amounts determined by higher organs. This will enhance each combine enterprise's responsibility to the state with regard to ensuring stable, highly effective performance.

Overall, the combine will work out draft plans of long- and short-term credit in accordance with the need for dynamic development of production and secure, stable financing of capital investment. To determine the amount of credit, the enterprises and organizations will submit their own requests to the financial-accounting center to serve as the basis for compiling combined estimates.

Long-term credit to finance capital investments will be extended to the combine as a whole. The council determines this credit for each enterprise and organization, based on financial status and the projected volume of capital investments. Thus, each kolkhoz and sovkhoz will be given credit in the financial-accounting center. The credit is to be paid off in accordance with terms set for the combine.

Consequently, the combine council has the possibility, on the one hand, of exercising a direct influence on price formation, which is one of the crucial conditions ensuring a stable, profitable operation for all enterprises and organizations and, on the other hand, combining everyone's efforts in the financial-accounting center while retaining the economic and managerial

responsibility of each subunit for the results of its own work. The result is a more effective utilization of available financial resources, strict control over the channeling of capital investments and input, reduced prime cost, and improved production profitability.

Development of a Modern Material Base--A Vital Concern of the Combine Council

Even in the first stages of development, the combine is building up its material base essentially from its own resources. In the next few years it proposes to do away completely with budget financing and convert to operations on the principle of self-support. This will make it possible to considerably expand the combine's rights in regard to capital construction.

The combine council determines volumes of capital investments independently. They are made up of financial resources at its disposal which remain after covering production costs, economic incentive fund monies intended for production development, and allocated budget appropriations for earmarked financing of capital investments in accordance with the established regulation, also long-term credits obtained from Gosbank. This is the first component which determines the capital construction plan. The second component comprises material-technical resources and volumes of contract work. The latter two indicators are determined by the higher-level organization.

A situation may develop in which the combine's financial position will enable it to channel more funds into capital investments than there are material resources. The remedy for this can be found by expanding the production of construction materials locally and obtaining them on the basis of direct contracts. All indicators of the capital investments plan (totaling more than 80), which at present are determined by the higher-level organization, will be determined locally. As of 1985, the volume of capital investments in the combine as a whole has been determined at its initiative [po yego predlozhcheniyu] in the amount of 48.3 million rubles, compared to 28.9 million rubles in 1984.

To ensure the most effective utilization of funds, reduce construction timetables, and reduce the cost, the combine has set up its own construction organization, with a work volume of 8 to 10 million rubles per year. It also has a project-technology organization with an annual volume of more than 420,000 rubles, which is capable of drafting projects both for new construction and for the remodeling and expansion of existing enterprises. The combine council can independently approve title lists costing from 1 to 4 million rubles, also volumes of project-planning and contract work. Title lists with an estimated cost of up to 1 million rubles are approved by managers of enterprises and organizations making up the combine.

For more flexible monitoring of frequently changing production circumstances in construction, the combine has been given the right, in exceptional cases, to introduce changes in the course of the year (jointly with the construction organizations) into the distribution of construction-installation work allocations by projects and into plans of putting facilities into operation.

Within the overall financing plan, moreover, plans may be changed by redistributing funds to the projects depending on the course of construction.

It must be emphasized that the combine is given the right to determine the wage fund in construction that is carried out using its own resources [khozyaystvennym sposobom]. It is determined from project-estimate documentation on the basis of calculated labor expenditures.

This procedure makes it possible to organize capital construction in a new way. The handling of many problems is turned over to local outfits and, moreover, the very principle of plan formation is changed. At present, farm managers' main concern is to prove to the appropriate higher-level organization the necessity of increasing capital investments. After the capital investments plan is approved "from above," sources to finance them are "automatically" formed and construction materials provided. The following pattern emerges from these conditions: the "lower levels" invariably request an increase in capital investments; the higher organs, having strict quotas, cannot satisfy their request. Consequently, there are frequent errors of various kinds in the channeling and utilization of funds.

In the combine this picture is changing, because the outfit's own funds serve as the basis for the formation of the capital construction plan. Under these conditions the combine council can keep a thrifty eye on each ruble, because the combine itself forms the whole plan.

The combine is supplied with equipment, machinery, construction materials, and metal by organizations of USSR Gossnab; Selkhoztekhnika remains responsible for spare parts. The supply services that used to be found in each enterprise have now been combined into a single center, thus making it possible to reduce overstocks, reduce the administrative apparatus, and act more flexibly in regard to problems of material and equipment deliveries.

Rights and Duties of the Combine in Matters of Wages, Working Conditions, and Cadres

To ensure the harmony of interests of each worker and each enterprise collective with the interests of the combine as a whole, the council has the right to draw up and confirm, relative to existing ones, procedures governing wages and bonuses to workers, engineering-technical personnel, enterprise and organization managers and specialists, and also combine administrative apparatus personnel. This makes it possible to materially motivate workers in agriculture and the processing enterprises to strive toward end results--the production of a variety of high-quality food products.

In connection with the planned major construction of new enterprises and the expansion and remodeling of existing ones, the combine has been given the right, when necessary, to increase the salaries of management personnel and specialists for the period of assimilation of newly commissioned facilities of up to 2 or 3 years to groups 1 to 3 compared with the wage group established on the basis of volumes of product sales for the particular enterprise for a given year, and also to retain for 2 to 3 years the average monthly pay of

managers who have been transferred to work in subunits and enterprises having a lower volume of product sales.

The combine also has the right to establish a unified work time schedule in all enterprises and organizations for particular groups of workers within the limits of normative work time for the accounting period. This is a very important factor.

For purposes of more effective utilization of the work force, and considering the seasonal nature of production, the combine may temporarily send enterprise and organization workers to aid the kolkhozes, sovkhozes, and other agricultural enterprises, and in the winter and interseasonal periods, by the same token, to bring in workers and equipment from the farms to work in the combine's enterprises and organizations.

In order to provide incentive to highly qualified engineering-technical personnel and employees of enterprises and organizations, the combine can institute a wage bonus in the amount of up to 50 percent of the regular rate within the limits of the plan wage fund, utilizing for this purpose 0.1 percent of the combine's total plan wage fund. In order to provide rapid training of cadres necessary to the combine, it has the right to create training centers and bases and to organize production-technical courses and schools to study advanced labor methods.

One of the combine's main tasks is to implement integrated mechanization of labor-intensive processes on the basis of the adoption of up-to-date technologies, to ensure that labor productivity runs ahead of wage increases, and to increase workers' output. The combine independently determines the administrative structure and staffing of the combine as well as the enterprises and organizations that make it up, within the limits established by the RSFSR Ministry of Agriculture with regard to maximum appropriations for the maintenance of the administrative apparatus.

Under the new conditions of management, it is becoming possible to maintain collaboration and direct liaison with organizations and enterprises of the CEMA member countries and Yugoslavia in the field of science, technology, and international cooperative production for purposes of accomplishing the targets of the state plan, efficiently dealing with problems relating to the implementation of international and economic agreements, and the exchange of work experience in the organization and perfecting of production. The combine has the right to set aside some of its products out of the volume remaining at its disposal after meeting obligations with regard to deliveries to all-union and republic stocks, for sale abroad through foreign trade organizations, and for the acquisition (using earnings) of equipment, materials, technology, and licenses enabling it to expand the production of agricultural goods.

Practical work on instituting the combine is under way. It has had transferred to it all enterprises and organizations stipulated by the decision; its structure, staff, and material-technical supply conditions have been worked out; a Temporary Statute has been approved. Work is under way to deal more precisely with matters relating to the organization of the

financial-accounting center. Measures are being drawn up and implemented to enhance the intensification of agricultural production.

In 1984, all winter grain crops were sown according to the intensive technology; use was made of integrated mechanization to harvest sugar beets. The first steps have been taken toward organizing trade and commodity deliveries for export. Preparatory work is under way on the construction and remodeling of enterprises for the processing, storage and transporting of agricultural goods.

In 1984 the combine's farms successfully completed the established state plan and made a profit. The combine's total profit exceeded 76 million rubles.

In 1985 the enterprises and organizations making up the Kuban Combine will take another significant step toward boosting volumes of production, expanding the assortment, and improving the quality of food commodities and, on this basis, improving supplies to the resort districts of Krasnodar Kray and the resort city of Sochi.

The creation of the Kuban Agroindustrial Combine, which is somewhat experimental in nature, is one more proof of the work being done at the initiative of the Communist Party to firmly establish in all sectors of economic activity the economic conditions under which greater independence is organically combined with greater responsibility in order to ensure all-round perfecting and improvement of the forms and methods of socialist management.

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TILLING AND CROPPING TECHNOLOGY

USSR FORAGE GRAIN PRODUCTION DISCUSSED

Moscow ZERNOVOYE KHOZYAYSTVO in Russian No 4 Apr 85 pp 2-4

[Article by V. Ye. Solovov, deputy chief of the Grain Crop Administration of the Main Administration of Grain Crops and General Problems of Agriculture of the USSR Ministry of Agriculture: "The Country's Feed Grain Fields"]

[Text] The successful development of animal husbandry would be unthinkable without establishing a solid feed base and providing it with enriched concentrated feed. Foremost in this matter is the further improvement in fodder crop production.

In recent years agricultural organs, kolkhozes and sovkhozes have done much to increase the gross harvest of barley and oats. Their contributions towards the country's overall grain output rise every year. Over the past 20 years it has grown from 30 to 43 percent. This was primarily achieved thanks to improvement in the sowing area patterns, expansion of fields planted with grain fodder crops and the introduction of high yield intensive type strains.

In our country three basic forage grain crops are cultivated--barley, oats and corn. Moreover, in the last three decades the increased needs of cattle raising, as well as the general food industry and brewing have contributed significantly to the expansion of land planted with these crops. While the Eighth Five-Year Plan had 23 percent of the overall land allocated to barley and oats, during the years of the current five-year plan it has risen to 34 percent. Today our country ranks first in lands allocated for growing spring barley and oats.

The most significant jumps in land devoted to grain fodder crops have taken place in a majority of oblasts in the non-black earth zone of the RSFSR. In comparison to the Eighth Five-Year Plan, the fields sown with barley have increased by 2.1 times and oats, 1.5 times.

Major achievements in boosting grain production which were realized on the kolkhozes and sovkhozes of the Baltic republics and Belorussia came about as a result of a fundamental change in the sowing area patterns and a marked improvement in the attention given to cultivating grain crops.

Currently barley and oats occupy one-half the area for grain crops in Belorussia and Lithuania, while in Latvia and Estonia they occupy two-thirds.

One of the factors contributing to the increased grain production of barley and oats in the Volga region is the saturation of the area with crop rotation. At this time 40 percent of the fields are under these crops.

Expanded planting of grain fodder crops is also taking place in the eastern regions of the country. On the kolkhozes and sovkhozes in the Ural region planting of barley, in comparison with 1966-70, has now almost tripled, while oat cultivation is up 1.4 times. Allocation of fields for these crops is 36 percent.

In West Siberia barley and oat planting for this period rose from 18 to 32 percent; in East Siberia it rose from 29 to 44 percent, and in Kazakhstan from 16 to 28 percent.

The growth in the production of fodder grain crops took place everywhere not only because of increased planting but also greater harvests.

The Kolkhoz "Vambola" in the Vil'yandinskiy Rayon of the Estonian SSR, for example, is famous for its harvests. For the years of the current five-year plan, on the average, it has produced from 42-45 quintals of barley and oats for every hectare. Moreover, their portion of the land sown for grain amounts to almost three-quarters. The farmers of the Kolkhoz "Progress" in the Grodnenskiy Rayon of the Grodnenskaya Oblast, having more than 50 percent of their grain lands sown with barley and oats, have derived correspondingly 54 and 43 quintals, on the average, per hectare in recent years.

High yield, stable harvests are produced at the Sovkhoz "Borodulinskiy" in the Sysertschiy Rayon in the Sverdlovskaya Oblast. A major role in this, in addition to other factors, has been played by the heavy planting of grain fields with fodder crops. Last year barley and oats took up more than 80 percent of all grain fields. In this case last year the grain yield of barley was almost 45 quintals per hectare, and oats 40 quintals per hectare. More than 20 quintals per hectare of grain fodder is being yielded by the Kolkhoz imeni Kirova in the Glubokovskiy Rayon of the Vostochno-Kazakhstanskaya Oblast, the Sovkhoz "Voskhod" in the Severo-Kazakhstanskaya Oblast, the Sovkhoz imeni Gazety "Pravda" in the Ural'skaya Oblast and on many other farms.

At the same time there are many spotty areas in the harvest of fodder grain crops. In recent years there has practically been no increase in the yield on kolkhozes and sovkhozes in the Kostromskaya, Orlovskaya and Ryazanskaya oblasts, while in the Bryanskaya, Kaluzhskaya, Yaroslavskaya, Kirovskaya and Permskaya oblasts the yield is significantly lower in this five-year plan than it was in the Tenth.

The country's food program has been marked by the further increase of resources of feed grain so that in the coming years we will be able to provide for the growing requirements for high quality grain fodder. The disposition of barley and oats by zone throughout the country that has taken form in recent years, in general, corresponds to natural and climatic conditions and to the biological peculiarities of these crops. At the same time, the kolkhozes and sovkhozes must improve the structure of the grain sowing area. This matter must be

approached creatively taking into account the recommendations of science, the experiences of the leading farms, as well as already developed zonal farming systems. First and foremost, we cannot allow an increase of fields sown only with one crop. It is only when field composition corresponds to the special purpose of the farm and its soil and climatic conditions, when the biological peculiarities of the strains have been accounted for and there is strict alternation of crops on crop rotated fields, that allows us to achieve excellent end results.

Despite the fact that the farms in the non-black earth zone already have large concentrations of fields under barley and oats, here there are still great reserves to expand land to cultivate these crops. One cannot agree with the fact that in a number of oblasts in the Central and Volga-Vyatskiy regions there has been a decrease in the amount of land used to grow spring barley during the current five-year plan. At the same time, fields planted with spring wheat have expanded by more than 1.5 times and now, in these regions, constitute almost one-fifth of the grain fields.

The expansion of fields under spring wheat makes no sense on the kolkhozes and sovkhozes in the Chuvashskaya ASSR, Mordovskaya ASSR, the Ryazanskaya, Orlovskaya, Kirovskaya and several other oblasts where 20-33 percent of the grain crop fields have been set aside for this crop. At the same time, spring wheat yields lag behind those of spring barley by 2-5 quintals per hectare. Therefore, the managers and specialists on non-black earth kolkhozes and sovkhozes, in developing a field planting organization, must carefully analyze the accumulated data and experiences and adopt rational sowing area patterns.

Further increase in the portion of land allocated for barley and oats is also justified in the steppe regions of the Volga, the southern Urals, Siberia and Kazakhstan. Science and practice confirms that there must be fallow grain crop rotation, in which fallow takes up from 16-20 percent of the plowed land. The fact that early barley increases the productivity of a hectare in crop rotation by 1.5-2 quintals of grain deserves special attention.

According to data of the All-Union Scientific Research Institute of Grain Farming, six-field crop rotation is highly effective where 16 percent of the land lays fallow 34 percent is used for grain fodder crops, and 50 percent for spring wheat. The fact is that lengthy cultivation of spring wheat after fallow is vulnerable to root decay and this sharply reduces crop yield. Oats, you see, are a decontaminating crop and after it spring wheat yields a harvest similar to that after fallow. Finally, planting fodder crops on two-crop rotation fields, on the whole, significantly raises the grain yield.

The short vegetation period and the later periods for sowing of barley and oats in the eastern regions of the country allow for doing active battle with weeds in the spring.

One reserve at our disposal for upping the gross yield of grain from fodder crops in Siberia and Kazakhstan is the saturation of fodder crop rotation planting with barley and oats, as well as using various low yield alkali soil complexes which in just the northern oblasts of the Kazakh SSR amount to more

than 16 million hectares, of which, one-fourth has already been plowed. Therefore, these lands, first of all, must be sown with grain fodder crops which form the basis for a greater harvest.

It is necessary to change land cultivation use in the forest steppe and sub-taiga zones of the Urals and Siberia where spring barley and oats provides a high yield per hectare.

Perfecting grain sowing patterns is the fundamental support necessary for providing increased harvests of fodder crops.

The most important reserve to raise barley and oat output is the intensive use of cultivation technology applicable to every soil and climatic zone of the country. Currently the leading scientific research institutions have developed standardized technological practices and equipment to cultivate fodder crops. We must hasten the introduction of this technology in production.

A major role in heightening output depends on the strain. The propagation of spring barley is being carried out at 50 scientific institutions, oats at 29. The producers' arsenal contains an ample collection of these strains for the country's various soil and climatic conditions and zones. A majority of new regionalized strains are distinguished by their rather high productivity and other valuable economic and biological features. But many of the new strains have serious shortcomings. Their yield is significantly reduced during years when the weather is unfavorable. They are less resistant to beating down in comparison to foreign strains. Besides, the newest strains are extremely vulnerable to disease and contain low protein content in the nodule. Essentially there are no high lysin strains of barley.

Basically late-ripening varieties, including foreign strains, have been created and regionalized for a majority of the oblasts in the non-black earth zone. They ripen late when there is greater precipitation. This complicates field work, lowers the harvest and makes for great difficulties in preparing seeds.

There is low efficiency in the propagation of oats. Farms now seed primary fields of this crop with foreign propagated strains. Therefore, our breeders must accelerate creation of more valuable strains of grain fodder crops that respond to the needs of intensive cultivation technology. They must be highly productive, resistant to beating down, disease, drought and other weather changes, as well as provide high quality grain.

One of the essential factors in raising yield and the gross output of fodder grain crops is well-organized seed growing. However, the country still has many kolkhozes and sovkhozes where new high yield strains are being introduced very slowly. Farms continue to plant strains on non-regionalized seeds. In 1984, 1.2 million hectares of spring barley and hectares of oats were planted in such a manner. A major portion of the land is planted with non-regionalized strains of barley on kolkhozes and sovkhozes in the Kostromskaya, Kirovskaya, Permskaya, Novosibirskaya, Alma-Atinskaya and Pavlodarskaya oblasts, while oats are so planted in the Krasnoyarskiy Kray and the Tyumenskaya, Chitinskaya and Irkutskaya oblasts.

A number of farms have new strains of grain fodder crops delivered from neighboring and, at times, from distant oblasts. These strains have not undergone comprehensive testing under the state crop testing system in local conditions. Cultivation of these varieties, as a rule, is not justified and leads to a decline in the overall yield and grain production of barley and oats.

Concern over modern strain changing must occupy the center of attention of managers and specialists at the agricultural organs, kolkhozes and sovkhozes. The experience at the advanced farms attests to the fact that to derive consistently high fodder grain crop yields, every farm must plant not one, but two or three varieties which vary according to biological characteristics. This gives us an opportunity to more efficiently use the potentialities of every field, precursors and fertilizers and to diminish the negative influence of unfavorable weather conditions.

An increase in the overall harvest of grain fodder crops is possible by greater expenditures under them for mineral fertilizers to which barley and oats respond. It is especially important to apply fertilizers containing phosphorus in the rows during planting. Abundant supplies of fertilizer gives us the opportunity to use this agricultural process on practically all fields planted. However, in recent years this work has clearly lagged in the Kuybyshevskaya, Saratovskaya, Kurganskaya, Voronezhskaya, Omskaya and in several other oblasts.

Our agricultural service must constantly be vigilant to protect plant life from pest, disease and weeds. During the present five-year plan many farms in the non-black earth zone of the RSFSR, the Central black earth zone, the Volga and Ural regions, in Siberia and Kazakhstan have plantings of barley and oats that are so seriously afflicted with smut, powdery mildew and a parasitic worm spore disease to such a degree of contamination, the result will be a major harvest shortage. In connection with this, farm managers and specialists in these regions must implement full-scale protective measures and organize a differentiated and integrated program to protect plant life from pests, disease and weeds.

And still the harvest of fodder grain crops is not carried out efficiently everywhere. Often many farms drag out the harvest which results in heavy grain losses at specific kolkhozes and sovkhozes.

Thus, inadequacies in the distribution and cultivation of grains places the task of sharply increasing the production of fodder grain crops before the country's grain growers. This is economically sound and necessary for the cattle breeding as well as the food industry. Ultimately, the resolution of many problems of the food program depends on this.

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TILLING AND CROPPING TECHNOLOGY

TESTING OF CHULPAN RYE DESCRIBED

Saratov STEPNEYE PROSTORY in Russian No 3, Mar 85 pp 16-17

[Article by Candidate of Agricultural Sciences V.A. Potushanskiy, head of the cropping department, and A.S. Gus'kov, senior scientific associate, Ulyanovsk Experimental Agricultural Station: "The Chulpan: Seeding Rates and Sowing Dates"]

[Text] In connection with the zoning of the Chulpan rye, a high-yield variety resistant to lodging, the Ulyanovsk Experimental Agricultural Station made a study of seeding rates and planting dates for bare fallow and peas from 1981 to 1983. The bare fallow was turned over in the fall to a depth of 28-30 centimeters with plows with skim-coulters. It was worked with cultivators with harrows in the summer as weed sprouts appeared (5-6 times). The land planted to peas was disced with a BD-10 harrow in two passes immediately after the crop was harvested. Fertilizer was applied for the pre-sowing cultivation: $N_{45}P_{45}K_{45}$ on the bare fallow and $N_{60}P_{60}K_{45}$ on the land planted to peas. Top dressing ($N_{20}P_{20}$) was applied in the spring with a disc planter across the plots.

The planting was performed on three dates: early--15 August, optimal--25 August, and late--5 September. Seeding rates were 2, 3, 4, 5, 6 and 7 million germinating seeds per hectare.

Weather conditions differed. During the summer of 1981 (May-August) there was 77 millimeters of precipitation, which is 2.5-fold less than normal. In addition, the temperature was 0.6-0.7° C higher than normal. During the winter and the vegetation period in 1982 and 1983, there was above normal precipitation with optimal temperature conditions.

During the 2 years the fullness of sprouts on the bare fallow increased on the average from 56 to 74 percent from the early planting date (15 August) to the late planting date (5 September). After that it began to drop. It differed somewhat by the year. The figures were 67-91 percent in 1980, 41-57 in 1981 and 70-87 percent in 1982. For crops planted on occupied fallow on 25 August, the average was 71 percent for the 2 years, 30 August--61, 5 September--61 and 10 September--70 percent. These differences were the result of the moisture supply. In 1981, for example, there was no productive moisture in the topsoil in fields on which peas had been grown, and the rye could therefore not be planted on the optimal dates. This did not become possible until precipitation

fell during the second 10 days of September. The fullness of the sprouts went from 53.6 to 79.6 percent in 1980 and from 48 to 83 percent in 1982.

Because of the high winter survival rate of the plants, there was insignificant thinning of the crops by the sprouting period. A larger portion of the late-planted crops was still lost, however. During the spring-summer vegetation period, there was a suppression and a certain mortality of the rye planted on both the early and the late dates. The reduced preservation rate and different degrees of bushiness for the different conditions affected the quantity of productive stems retained at harvest time.

The number of productive stems retained for the harvest for crops planted on bare fallow was 452 per square meter for the crop planted on 15 August, 472 for 20 August, 483 for 25 August, 469 for 30 August, 435 for 5 September and 433 per square meter for the crop planted on 10 September. These figures show that the number of productive stems decreases and differences in yield are reduced for both the early and the late plantings.

There were 458 productive stems per square meter for crops planted on occupied fallow on 25 August, 440 for the 30 August planting, 395 for 5 September and 376 per square meter for the 10 September planting. And so, there was a reduction in the number of productive stems for the late-planted crops in this case as well. This, as well as a differing percentage of kernels in the spikes and different kernel weights, affected the grain yield.

On average for the 2 and 3 years, the greatest yield--50-53.6 quintals per hectare--was obtained from crops planted on the most favorable, optimal dates (25-30 August). There was a small drop in yield for crops planted on the early dates--15-20 August--which makes it possible to adjust the beginning of the planting for years with different amounts of moisture in the soil. When precipitation falls at the end of July and the beginning of August, fuller sprouts can be obtained by planting individual fields on early dates, and during years with a summer and fall drought, the plantings should be performed over the entire area on earlier dates--between 15 and 30 August.

For rye planted on occupied fallow, the greatest yield--41.9-45 quintals per hectare--is obtained when planted on the best agrotechnical dates--25-30 August. According to data for 1 year, planting the Chulpan winter rye on earlier dates does not reduce, but actually increases the yield. Holding up the planting until 5 September results in a small drop in yield, while delaying it until September produces a considerable drop.

The seeding rates and planting periods must be differentiated somewhat for obtaining good sprouts during years with deviations in weather conditions. This is borne out by data from the following tests.

On bare fallow, there is adequate moisture for obtaining sprouts from winter crops at the planting depth almost every year. Only during dry years does the top layer dry out, which makes it difficult to obtain normal sprouts for crops planted on early and optimal dates. Precipitation puts moisture in the dry layer by the late planting period, and the sprouts are fuller, but the plants are not able to become well rooted and bushy in the fall.

Because of inadequate moisture in the occupied fallow, winter rye must be planted on the optimal dates in soil lacking adequate moisture, which reduces the fullness of the sprouts. The soil moisture is ordinarily greater for a later planting, and the fullness of the sprouts is improved. The possibility for fall development of the plants is reduced, however. Poorly developed plants do not winter as well, and there is greater thinning in the winter and spring. This means that the planting rate must be increased in order to obtain a normal crop density.

Because of the high winter survival rate of the plants, there was little thinning of the crops by spring. There was a suppression and considerable mortality of the plants during the spring-summer vegetation period, which was especially great for the earlier and denser plantings. The reduced preservation rate of the rye, as well as reduced productive bushiness, had the effect of equalizing the stem density for the different test conditions. For the early planting on bare fallow, for example, 471 productive stems were retained for the harvest with a seeding rate of 3.0 million per hectare, 453 with a seeding rate of 5.0, and 487 with a seeding rate of 7.0 million. The figures were 427, 483 and 500 respectively for crops planted on the optimal date, and 397, 409 and 494 per square meter for crops planted on the late date.

And so, increasing the seeding rate did not have an effect on the early planting, but it increased the number of productive stems for the crop planted on the optimal date. With the late planting date, increasing the seeding rate had a greater effect with respect to increasing the number of productive stems. Furthermore, the grain yield per spike was reduced in the denser plantings. All of this reduces differences in yields for the different seeding rates. Because of the good bushiness of crops planted on early and optimal dates, the maximum yield is obtained with a seeding rate of 4 million seeds per hectare--even 2.0 million per hectare during wet years.

Increasing the seeding rate to 5 million per hectare or more does not assure increased yields. For the late planting date, the best seeding rate is 5.0 million per hectare.

On occupied fallow, due to inadequate soil moisture and a reduced number of sprouts, the maximum yield is obtained with a seeding rate of 6 million per hectare for crops planted on both the optimal and the late planting dates.

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